PULP & PARER

APRIL 1960

PAPER WEEK IN PERSPECTIVE:

Warning by U.S. Forester

Additives — Expert's Advice

PULPWOOD SECTION:

New Wood Handling Ideas

EXCLUSIVE

The Story of Gilman North and South

Magnet shaped woodyard at Gilman's St. Marys, Georgia mill

see

page

84





Regardless of the stock, consistency or pressure, MICROLYZED Fillings by BOLTON lead in providing what papermakers want most in Jordan Fillings . . .

LONG WEAR because they are custom-processed from specified Jordan steel to a precise balance of hardness and toughness.

EVEN WEAR OF PLUG AND SHELL KNIVES because of guaranteed uniformity of hardness in each set of fillings and throughout each knife in the set.

In the manufacture of Jordan Fillings, Bolton controls the entire process. Starting in the laboratory, a photomicrostructural analysis is made of each shipment of Jordan steel. Deis mac. of each suppment of jordan steel. De-structive mechanical properties tests are made, which must fall within the rigid tolerance standards established. During production, non-destructive tests assure the desired properties previously determined are achieved during heat treatment.

Furnace temperatures are controlled to within tolerances of 5 degrees. Hardening is done in a BOLTON-designed quench in which each knife is clamped to maintain straightness. This exclusive method eliminates the need for later

straightening. Papermakers receive the benefits of a stress-free product.

Knowing that performance is a reflection of the materials used and the degree of skill and care shown in fabrication, no compromise is permitted at BOLTON.

Fifty two years of specialized Jordan Fillings experience is built in to every knife. So is the craftsmen's attitude — an attitude of conviction that none will deliver longer, more economical, day in day out resistance to wear than BOLTON MICROLYZED FILLINGS . . . RING TYPE — WEDGELESS — HYDRO-TRILISS . . . TRUSS. All are made by John W. Bolton & Sons, Inc., Lawrence, Mass.





Filling the Needs of Papermakers: JORDANS . CLAFLINS . FILLINGS . PLUGS STAINLESS PLUG JACKETS * BEATER BARS AND BED PLATES * SHOWER PIPES * SUCTION BOX COVERS * MAGNETIC EQUIPMENT * MACHINE KNIVES.



The Papermaker suggests:

Write today for Bulletin No. F-556 on Bolton Microlyzed Fillings. It has full information on:

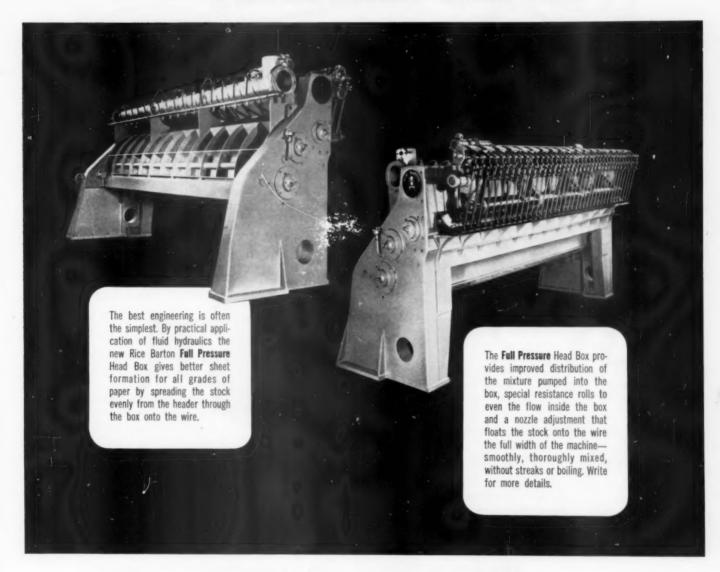
- · Wedgeless Plug Fillings
- · Hydro-Truss Shell Fillings
- Ring Type Fillings
- · Special Heat-Treated Steel
- · Bolton Stainless Steel
- Bolton Phosphor Bronze and other alloys
- Fillings Separator Materials
- · Knife Sizes
- · Stainless Steel Plug Jackets
- · Technical Advisory Service
- Instruction Charts on Changing Fillings

IN CANADA: Pulp and Paper Mill Accessories, Ltd. Montreal, P. Q.

OVERSEAS: United States Machinery Co., Inc. 90 Broad Street, New York 4, N. Y.

Manuel Del Castillo 1. La Catolica 45 Desp. 711-712 Mexico (1) D.F. IN MEXICO:

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FOURDRINIERS, PRESS SECTIONS, DRYER SECTIONS, CALENDERS, REELS, WINDERS, HEAD BOXES, SIZE PRESSES, BREAKER STACKS, DIFFERENTIAL DRAW CONTROL DRIVES AND CONE PULLEY DRIVES, PULPING EQUIPMENT, HIGH VELOCITY AIR DRYERS, TRAILING BLADE COATERS, FIBRE-FLASH DRYING SYSTEMS



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BIRD-JONSSON SCREENS

PULP & PAPER

Reader's Guided Tour

VOLUME 34 NUMBER 4

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U.S. Forester Warns Industry



It will take "guts" and foresight by this industry, if it is not going to face a strangling of its growth potential in the next decade. Dr. McArdle (picture) sees bitter competition ahead for the forest lands of the nation.

70 Advice on Additives Amendment



Dr. Oser (picture) tells the industry what to do and what to expect, as the Food Additives Amendment goes into effect. He predicts Food & Drug Administration will make all its rulings applicable "across the board." Confusion still reigns.

78

The Facts about Noralyn



There was much discussion and considerable misunderstanding about the Noralyn process during Paper Week. In this exclusive interview with Leo Stack, pres., and Jack Ainsworth (picture), vice pres., P&P editors pull no punches and set the record straight.

84

Gilman North and South



Here's an interesting know-your-industry feature on the Gilman familyowned mills at St. Marys, Ga., and Gilman, Vt. Told for the first time, this exclusive report outlines Gilman's expansion plans.

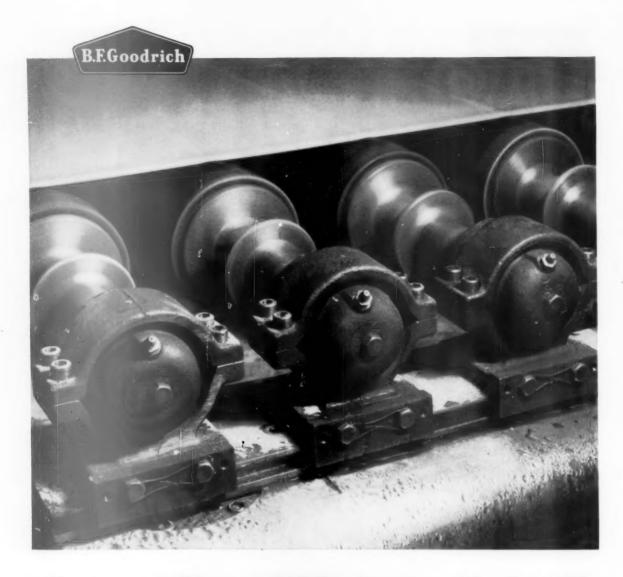
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Some rolls wobble instead of roll

—and those that do spoil the formation of the sheet. You'll never have this problem with B.F.Goodrich Dukbak table rolls. That's because they're dynamically balanced to prevent whipping, even at high speeds. Rolls that are perfectly balanced run longer between recoverings. The sheet they help produce is smooth and uniform.

B.F.Goodrich Dukbak rolls shed water fast, throw it down and away. There's no danger of water spray returning to the wire and spotting the sheet. These rolls can run at speeds up to 1000 feet per minute without deflectors, so water removal is faster, much more efficient.

In addition to better performance, B.F.Goodrich Dukbak table rolls have many other cost-saving advantages. Cover separation is impossible because the rubber is locked to steel by the patented Vulcalock process, the strongest rubber-to-steel adhesion known today. There's no danger of corrosion because

the ends are sealed against moisture. And, after years of hard service, Dukbak rolls can be reground as good as new.

Let a B.F.Goodrich man show you how these longer-lasting rolls can improve the quality of your paper. And if you are buying a new fourdrinier or having one rebuilt, be sure to specify B.F.Goodrich Dukbak rolls to your machine builder. B.F.Goodrich Industrial Products Company, Department M-822, Akron 18, Ohio.

B.F.Goodrich paper mill rolls

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The Editor Reads His Mail



Address letters to The Editor, PULP & PAPER, 1791 Howard St., Chicago 26, Ill.

This Little Story Went a Long Ways!

-Neenah, Wis. Editor: I thought it might please you to receive the attached copy of a letter we received the other day from a paper making firm in India. A number of other inquiries were made following the appearance of the fine article you wrote about the portable educational exhibit of pulp and paper manufacturing in PULP & PAPER.

There is some moral in this having to do, I believe, with some reference to the "power of the press," but I don't want to stir you up.

> T. E. BRANAGAN, Manager Wisconsin Paper Industry Information Service.

The Letter from India:

The Information Service Wisconsin Paper Industry, Neenah. Wiscon., U.S.A. Dear Sirs:

The Ready for Use, ISWPI display, a photograph of which appears on page 98 of the December 1959 issue of PULP & PAPER has evoked much interest in our circles here. Let us first congratulate you on this commendable contribution you have made to the Industry.

Naturally we are anxious to get one such exhibit for display here and would like to know how it can be arranged at the earliest.

We are expectantly looking forward to your reply.

> for Orient Paper Mills Ltd. N. K. MOHATTA Asst. Factory Manager.

Admiration for Japanese

-Hopkinton, Mass. Editor: I want to congratulate Mr. Blackerby on his well written and well illustrated article in February entitled "First Japanese Mill in North America Pioneers New Methods.

I have been to Japan many times in the interest of pulp and paper manufacturing. Having met many Japanese, I have a great admiration for them and their resourcefulness in a great many ways.

I noted that you presented a very good photograph of a Minton Dryer. This section was especially interesting to me as a member of the economics engineering committee of TAPPI.

ROLAND A. PACKARD Pulp and Paper Mill Consultant

Liked Sitka Report

- Seattle Editor: Louis Blackerby, your Western Editor, is to be congratulated on the excellent feature article on our company in your February edition.

> DANIEL J. DOSWELL Public Industrial Relations Manager Alaska Lumber & Pulp Co., Inc.

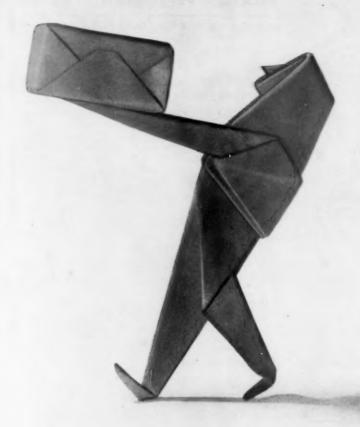
"Useful Publication"

-New York . . PULP & PAPER, a very Editor: . useful trade publication. .

> J. R. CARNEY Staff Production Mgr. Oxford Paper Co.

THE PULPWOOD ANNUAL

The next issue-May issue-of PULP & PAPER will contain the Pulpwood Annual, prepared in cooperation with the American Pulpwood Association. The extensive report will include complete papers given at the annual meeting of APA, held in New York, Feb. 22-24, during Paper Week. For more about this special feature, turn to the Last Word Page, the last page of this issue.



Pulp from Gottesman means...

SERVICE!

Bleached and Unbleached Sulphite • Bleached Hardwood • Groundwood Bleached, Semi-Bleached, and Unbleached Kraft



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MONTHLY REPORT - WORLD NEWS

40,000,000 ANNUAL TONS . . . was maximum capacity of U.S.A. paper and board industry at end of 1959, said Benjamin Slatin, APPA economist, during recent Paper Week. Daily capacity will jump from present 118,770 tons to 129,250 by end of 1962. On yearly basis, this 3,600,000-ton addition (maximum) indicated for 1960-62 period reflects 2,800,000 tons from new machines and 800,000 tons from improvements. (Full Paper Week report elsewhere in this issue.)

NO AGREEMENT IN IMMEDIATE FUTURE PAPER provincial official tells PULP & PAPER with regard to proposed Alberta Pulp Mills Ltd. The \$50,000,000 operation with 450-ton daily unbleached kraft pulp capacity was to be built near Rocky Mountain House, Alta., Canada. Reports were that both U. S. and Swedish capital were backing venture.

IN ANOTHER ALBERTA PROJECT . . . prospects are more favorable, according to reports heard at Paper Week. Plans are progressing rapidly for pulp mill in province's western region.

CROSSETT PAPER MILLS TO APPLY CLAY AND OTHER COATINGS . . . to bleached food board at Crossett, Ark. Equipment installation will cost \$1,500,000, is set for mid-year completion. "To assure maximum uniformity and quality," a Rice Barton trailing blade will apply primary coat, followed by Warren-Dilts knife applying secondary coat.

TO TRIPLE PRODUCTION IN OHIO . . . where Kimberly-Clark Corp. plans installation of No. 2 machine at Moraine Paper Co. div. of American Envelope Co., West Carrollton. Unit will produce 168-in. sheet in bond, offset grades. Floor space of plant to be nearly doubled. Included in project: (1) Waste paper and pulp storage room and deinking plant; (2) finished paper and shipping storage building; (3) clay unloading shed; (4) addition to powerhouse, and (5) new boiler. Completion set for late 1961.

REPLACEMENT OF MILL ELECTRICAL SYSTEM
... is planned in \$3,500,000 three-year
program at Bowaters Mersey Paper Co. Ltd.
in Liverpool, N. S. System — much of
which has been in use more than 30 years
—must be modernized to maintain mill
efficiency. Work will start about June 1.

PRESSURE FROM THE LUMBER INDUSTRY . . . caused Western Plywood Co. (Vancouver, B.C.) to abandon plans for pulp mill in British Columbia's Cariboo district. Demand for more saw timber resulted in provincial government not granting adequate assurance of necessary log supply.

ON ORDER: ONE OF WORLD'S LARGEST PAPER MACHINES... of its type at Madawaska, Maine mill of Fraser Paper Ltd. It is at this mill that Fraser Companies Ltd. has concentrated most of recent expansion. Machine is 234-in. John Inglis Co. Ltd. unit, set for mid-year start-up. New building under construction may house two such machines. Two new pipelines will carry pulp from Fraser mill in Edmundston, N.B., Canada, across St. John River.

\$4,000,000 CANADIAN EXPANSION . . . where Thurso Pulp & Paper Co. will increase output by more than 50% at Thurso, Que. bleached kraft mill. Completion set for year-end.

TODAY'S NEWSPRINT—TOMORROW'S BEEFSTEAK
... Newspapers, containing 90% cellulose, are nutritionally similar to hay,
say West Coast researchers now experimenting with pelleted cattle feed made
from old newspapers, vitamins and minerals... In Scandinavia, farmers have
been feeding newsprint for some time.

GLASSINE MILL FOR GEORGIA . . . is planned by Deerfield Glassine Co. (Monroe Bridge, Mass.) adjacent to now-under-construction plant of Continental Can Co. near Augusta, which will furnish pulp. Facility will be South's first glassine, greaseproof and lightweight specialty mill. Start-up set for April 1961. (Story in this issue.)

... Fluid Power NEWS

REPORT
No. 12,300
HIGH
PERFORMANCE
WINDER
DRIVES

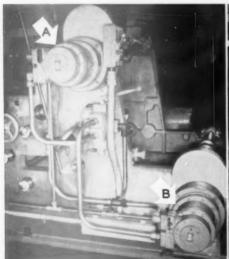
From Oilgear Application-Engineering Files

HOW OILGEAR PROGRESSIVE ENGINEERING PACES IMPROVEMENTS ON "BEMIS" MACHINES

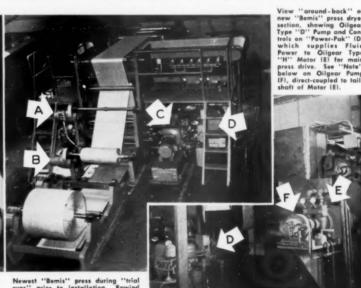
CUSTOMER: Bemis Bro. Bag Company, St. Louis, Missouri

DATA: To efficiently produce the wide scope of paper, cloth, and polyethylene "Flexible Packaging" for which they are famous, "Bemis" designs and builds their own production machinery. Basically, "Bemis" machines are roll-fed, multi-color printing presses capable of very close register... operating from inching speeds of 15 fpm to running speeds of 400 to 1000 fpm. Press runs range from 1000 to 1,000,000 bags. Being roll-fed presses, winder drives and controls were a major problem, as ratios of 5:1 up to 10:1 from core to finished roll diameter are not uncommon.

Paper widths vary from 10" to 56", with roll weights from 1000 to 2000 lb. "Bemis" specified that their winder drives must be compact; easy for shop, maintenance, and operator personnel to adjust, maintain, and understand. All electrical controls must be simple, with standard components preferred. Each machine to have one main control panel, and three or four remote, push-button panels — with some constant indication of load and tension as a desirable feature. Long, trouble and maintenance-free life was also of prime importance along with ease in installation.



Close-up of face-mounted, Oilgear Type "H" Fluid Power Motors (A, B), geared to rewind spindles of newest "Bemis" machine, shown center. Oilgear Type "D"? "Pump on "Power-Pak" (C) — center photo — supplies Fluid Power for re-wind drive.



Pumps and Controls can be seen "tucked away" under the dryer section.

SOLUTION: Through a program of constant improvement and engineering teamwork, Oilgear Fluid Power Drive and Control Systems have so successfully paced requirements for more efficient production equipment that "Bemis" plants in 16 cities now have 48 machines equipped with Oilgear winder drives. Dancer roll controls are used on 39 . . . 9 more recent installations have "*HYTAC SYSTEM" drives. Two newest machines (one shown above) have Oilgear Type "D" electrohydraulic servo controlled main press drives, and hydraulic servo controlled winder drives. One reason for this everincreasing use of Oilgear "Any-Speed" drives has been clearly stated as follows: "We put them in and forget about them . . . some have been operating for over 11 years without service or repair — many loaded to maximum capacity — others have had no oil change in five years" . . . proof of the statement heard in all industry — "For the lowest cost per year — it's Oilgear!" One "Bemis" installation using a HYTAC SYSTEM winder operates over a 13:1 ratio — from 31/4" diam. cores to 431/2" diam. rolls — is limited only by interference on the machine. Of this HYTAC SYSTEM winder operates over a 13:1 ratio — from 31/4" diam. cores to 431/2" diam. rolls — is limited only by interference on the machine. Of this HYTAC SYSTEM, "Bemis" states — "Other types of variable speed drives could never do this . . operating beyond our fondest hopes."

NOTE: An unusual installation feature is partially visible on photo above. Oilgear Type "H" Fluid Power main press drive motor (E) is also direct-coupled to Oilgear Type "H" Pump (F) which supplies Fluid Power to an Oilgear Type "H" Motor — not shown — that drives the dryer fan.

USER REPORTS — "... exceptionally fine acceleration control... smooth creeping and inching speed up to maximum... exceptionally smooth running speed... are easier to adjust than other drives ... require less space... pressure gage shows load while drive is in operation... maintain an adjustable tension from constant tension to constant torque." "Bemis" — like other users — has found that Oilgear Drive and Control Systems give them constant tension, automatic tapering tension, stall tension, constant torque, automatic tapering torque, or a combination of tension and torque characteristics to meet their every production requirement.

For practical solutions to YOUR linear or rotary Controlled-Motion problem, call the factory-trained Oilgear Application-Engineer in your vicinity. Or write, stating your specific requirements, directly to . . .

THE OILGEAR COMPANY

Application-Engineered Controlled Motion Systems
1592 WEST PIERCE STREET • MILWAUKEE 4, WISCONSIN

MONTHLY REPORT - WORLD NEWS

GREAT OPPORTUNITIES IN EUFOPEAN COMMON MARKET...says J. P. Levis, board chairman of Owens-Illinois, Toledo, Ohio. Since December 0-I has acquired majority interests in Belgian and German glass manufacturers. "We are confident that we can contribute to and profit from anticipated economic growth in this area of the world."

THREE-STAGE CONTINUOUS BLEACHING AT RHINELANDER, WIS. . . where Rhine-lander Paper Co. div. of St. Regis Paper Co. will build plant with daily maximum capacity of 120 tons. Three stages are: chlorination upflow at 3% consistency; caustic up-flow at 3% (or 12% down-flow), and hypochlorite down-flow at 12%.

AIMING AT TWIN GOALS . . . is 1960 modernization program of Finch, Pruyn & Co. Inc., Glens Falls, N. Y.: improved quality, increased capacity. Highlights include new digester for chemical pulp; size press for No. 2 machine, and additional drying capacity on three machines.

LOWEST LEVEL IN 3 1/2 YEARS . . . was reported for shipments of folding cartons in January. Says Folding Paper Box Assn. of America: dollar volume fell 6.1% behind January 1959, and tonnage was off 7.3%.

CONVERSION TO CLOSED HOOD INCREASES OUT-PUT 10% . . . at Covington, Va. mill of West Virginia Pulp & Paper Co., where on-machine coating was recently added to No. 5 machine. Steam consumption is reduced about 5%. Machine produces paper-board for cigarette cartons, drinking cups, foodboard, etc. Conversion was by J. O. Ross Engineering div., Midland-Ross Corp.

HIGHER INCOMES—HIGHER PAPER USE . . . Says Karl O. Nygaard, director of business research for B. F. Goodrich Co., Akron, Ohio: "By 1970 there will be about 25,000,000 American families with incomes over \$7,500 a year. Today only about 12,500,000 families have reached this level."

NEWSPRINT PRODUCTION UP IN JANUARY . . . 7.6% above year ago volume, according to Newsprint Service Bureau. North American output was 706,856 tons; shipments at 660,810 tons were 6.4% ahead of January 1959.

HOPSCOTCHING THE NORTH AMERICAN INDUSTRY . . . Packaging Corp. of America, eightmonth-old combination of three old line firms, has established headquarters in Evanston, Ill. . . . Weyerhaeuser Co. reports pulp-paper sales slipped 3.4% in 1959. although production was higher. . . Increased sales and earnings in 1959 *is an encouraging sign for the future", says Thomas B. McCabe, president of Scott Paper Co., Chester, Pa. . . . Growth of the Mead Containers div. of Mead Corp., Cincinnati, Ohio, has led to establishment of four regional offices: at Memphis, Tenn.; Cincinnati and Toledo, Ohio, and North Bergen, N. J. . . . Michigan Carton Co., Battle Creek, Mich., has installed a WUPA automatic cutting, creasing and embossing press equipped with automatic stripper, unit scores and strips waste material at speeds up to 4,000 sheets per hour.

MORE ON THE INDUSTRY . . . Fiberboard Paper products Co. will install a Chemico (Chemical Construction Corp.) S-F Venturi gas scrubber on reburning lime kiln at Antioch, Cal. . . . Southwest Forest Industries Inc., Phoenix, Ariz., has effected consolidation with two more Los Angeles paper products firms-Accurate Corrugated Specialty Corp. and Arrow Board Corp .- as step toward providing markets for pulp-paper mill Southwest is building in northern Arizona. . . . Bowater Corp. of North America Ltd. reports production will begin in June at new hardboard mill at Catawba, S. C. . . . New Chicago, Ill. corrugated packaging materials plant of St. Regis Paper Co. is in production; designed annual capacity is 35,000 tons. . . Olin Mathieson Chemical Corp. opens corrugated container sheet plant in Dallas, Texas, to serve Dallas-Ft. Worth area; operation supported by pulp-paper mill in West Monroe, La. . . .

Motors and Generators ... that's our Business!

can do!

During your next planning pow-wow on a forthcoming project, consider this challenge (ME* Can Do!) from a tribe of "Injun-eers" who make motors and generators their only business . . . and who have been successfully conducting this business on product merit for nearly 50 years.

Feathers in our bonnet include some of the world's most honored projects and our scalp belt includes a multitude of the leading names in industry, but the Chiefs at ME* are more interested now in what ME* can do . . . for you!

Wherever you are, whatever your requirements, there's an ME* Sales Engineer ready to visit your reservation, sit in at your council fire and discuss your requirements . . . help you with your planning . . . prove the superiority of Marathon Electric Motors and Generators.



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> Garathon Blectric

MANUFACTURING CORPORATIO

M O T O R S

Home Office and Factory at Wausau, Wisconsin

Factories at Erie, Pa., "
and Earlville, Illinois

Offices in Principal Cities

MONTHLY REPORT - WORLD NEWS

INCREASED "SHELF LIFE"... is one result of new paper cup package adopted by Melch's Food Products, Akron, Ohio salad packer. This because of better resistance to moisture and oils. The 16-oz. units with polyethylene window lids are made by Dixie Cup div. of American Can Co.

CANADIAN MOVES SOUTH (TEXAS, THAT IS)
... Through subsidiary, Anglo-Canadian
Pulp & Paper Mills Ltd. purchases 200
acres near Texarkana, Texas. Spokesman
for Quebec company says: "There has been
no decision to build as yet, but we have
the land." Suggested project: a pulp
and newsprint mill; subsidiary: AngloSouthern Paper Corp.

WOODPULP FOR EXPORT SHOWS GAIN . . . in December, according to U. S. Pulp Producers Assn. Total was 72,391 tons, compared with November's 54,143. Big gain was in special alpha, up nearly 100% at 34,840 tons; another substantial gain came in semi-bleached kraft, up 3,835 tons at 9,527.

NEW BOARD MACHINE IN ENGLAND . . . where Reed Corrugated Cases Ltd. has installed 300-ft. unit at Brentford, Middlesex. Plant will increase production of wide corrugated fiberboard "by many millions of square feet per week."

NORWEGIAN FIRM BREAKS PRODUCTION RECORD
... Saugbrugsforeningen at Halden. Output of paper and board was 75,246 short tons, breaking company's previous yearly high of 73,274 set in 1958. Big 1959 project was bleach plant rebuild. ... Another record in Norway. Hunsfors Fabrikker, near Kristiansand, produced 14.5% more paper last year than in 1958.

HUNGARY: INITIAL COST RETURNED IN YEAR

. . is expectation at £1,000,000
(US \$2,804,000) straw-cellulose plant
being built at Sztalinvaros by Komplex.
Equipment supplied by Lyddon & Co. Ltd.
By 1963 plant will be processing 73,920
short tons baled straw to produce some
25,000 tons bleached cellulose for paper.

where N. Z. Forest Products Ltd. has a third machine on order that will boost output from 34,720 to 78,400 short tons annually. Firm's new \$2,800,000 machine is now producing glazed kraft for wrapping. Chlorine plant set for May operation will have 3-ton daily capacity, later to be doubled. No longer forced to import the chemical, N.Z. Forest Products hopes to save \$100,000 per year.

NEW FRENCH RECORD . . . was set in October with production of just over 242,000 short tons. Predicted that 1959 output will total 2,534,600, and that 1960 will be some 2,755,000. . . . Says Papier Carton et Cellulose: "Users are of opinion that French pulp quality is equal to that of standard Scandinavian pulps. But, unfortunately, there still exists a considerable disparity in cost. For this reason, protection of French pulp industry is essential."

BIG NEW MILL FOR EAST GERMANY . . . where 770-ton plant now being constructed at Schwedt an der Oder will be one of Europe's largest. Completion scheduled for 1964.

SOVIET PAPER PRODUCTION UP 4% . . . in 1959, according to Central Soviet Statistics Board. Output totaled about 2,530,000 short tons. At same time, population grew by more than 1.8%.

PROGRESS IN SOUTH AFRICA . . . where locally-produced white sulfite paper was to be available in January for first time.

LONG-RANGE MODERNIZATION COMPLETED . . . at Exeter, England mill of John Pitts & Sons Ltd., where drying capacity has been increased to 70 tons weekly with new hood installation.

WOOD PULP GOES TO CUBA . . . Despite today's uncertainties, woodpulp is being shipped to Castro's island by at least two U.S. firms. Most recent shipment from U.S.A.: 550 tons of kraft pulp to Industria de Papel Carton.



MONTHLY REPORT - WORLD NEWS

INCREASED "SHELF LIFE" . . . is one result of new paper cup package adopted by Melch's Food Products, Akron, Ohio salad packer. This because of better resistance to moisture and oils. The 16-oz. units with polyethylene window lids are made by Dixie Cup div. of American Can Co.

CANADIAN MOVES SOUTH (TEXAS, THAT IS)
... Through subsidiary, Anglo-Canadian
Pulp & Paper Mills Ltd. purchases 200
acres near Texarkana, Texas. Spokesman
for Quebec company says: "There has been
no decision to build as yet, but we have
the land." Suggested project: a pulp
and newsprint mill; subsidiary: AngloSouthern Paper Corp.

WOODPULP FOR EXPORT SHOWS GAIN . . . in December, according to U. S. Pulp Producers Assn. Total was 72,391 tons, compared with November's 54,143. Big gain was in special alpha, up nearly 100% at 34,840 tons; another substantial gain came in semi-bleached kraft, up 3,835 tons at 9,527.

NEW BOARD MACHINE IN ENGLAND . . . where Reed Corrugated Cases Ltd. has installed 300-ft. unit at Brentford, Middlesex. Plant will increase production of wide corrugated fiberboard "by many millions of square feet per week."

NORWEGIAN FIRM BREAKS PRODUCTION RECORD
... Saugbrugsforeningen at Halden. Output of paper and board was 75,246 short tons, breaking company's previous yearly high of 73,274 set in 1958. Big 1959 project was bleach plant rebuild. ... Another record in Norway. Hunsfors Fabrikker, near Kristiansand, produced 14.5% more paper last year than in 1958.

HUNGARY: INITIAL COST RETURNED IN YEAR

. . . is expectation at £1,000,000
(US \$2,804,000) straw-cellulose plant
being built at Sztalinvaros by Komplex.
Equipment supplied by Lyddon & Co. Ltd.
By 1963 plant will be processing 73,920
short tons baled straw to produce some
25,000 tons bleached cellulose for paper.

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In the chips-with a 5-to-2 pay-off

This Southern papermaker's elevator belt just couldn't stand up under the mountains of pine chips. Its cover softened up under their resin attack. It stretched and needed constant take-ups. And, after just one year, it had to be cut and respliced. 160 tons more pulp could have been processed in the time lost. At the two-year time mark, the belt failed completely.

Clearly, something had to be done. A belting specialist, the G.T.M.—Goodyear Technical Man—was called in. His recommendation: a special belt with oilresistant cover of CHEMIGUM—sure-fire protection against the effects of pine oils and resins.

The results were quickly apparent. Operating 24 hours a day, the G.T.M.'s belt never lost a minute

due to belt failure. It put in a full 5 years of service. Even then, it had plenty of life left when an accident tore it in two.

And that's just one more example of the way the G.T. M. and his industrial rubber products come through when the chips are down. To contact him — for full information on them — call your Goodyear Distributor or write: Goodyear, Industrial Products Division, Akron 16, Ohio.

It's SMART TO DO BUSINESS with your Goodyear Distributor. He can give you fast, dependable service on Hose, V-Belts, Flat Belts and many other industrial rubber and nonrubber supplies. Look for him in the Yellow Pages under "Rubber Goods" or "Rubber Products."



GOOVEYOR BELTS BY

Chemigum—7. M. The Goodyear Tire & Rubber Company, Akron, Ohio

THE GREATEST NAME IN RUBBER

WORLD PULP & PAPER

Technical News

Chip Impregnation With Sulfite Cooking Liquor

Aurell, Ronnie; Stockman, Lennart, and Teder, Ant. Svensk Paperstidn, 61, no. 21: 937-44 (Nov. 15, 1958). [In Swedish; English and German summaries] Abstr. Bull. I.P.C. 29: 1203.

The effects of steaming time, hydrostatic pressure, chip, moisture, temperature and sulfur dioxide concentration on the impregnation rate of spruce heartwood chips by sulfite cooking acid were investigated. Penetration was considerably facilitated by presteaming and by pressure impregnation. In the absence of hydrostatic pressure, penetration was often inhibited by gas evolution, especially from nonsteamed chips. High chip moisture was beneficial, whereas the sulfur dioxide content of the cooking liquor was of no great importance. Pulsating pressure showed no great advantage over constant hydrostatic pressure. The effect of temperature depended on the change in liquor viscosity and on the difference between total pressure and cooking liquor pressure. A suitable combination of presteaming and pressure impregnation can give complete chip penetration readily, even in large industrial digesters, and will permit shorter cooking cycles and more uniform digestion.

Secondary Flow-U. S. A.

Appel, David W. (Univ. of Kansas). Tappi 42, no. 9: 767-73 (Sept. 1959). [Eng.] Abstr. Bull. I, P. C. 30:585.

Results of a study of fully developed secondary motions in the flow between concentric cylinders, with inner one rotating, are reported. These motions, called Taylor vortices, have been shown to have important effects on the flow through fourdrinier paper machines. Existence of both laminar and turbulent regimes of flow in Taylor vortices was established. Strength of vortices was measured and found to increase linearly with increases in the rotational speed of the inner cylinder up to the point of transition to turbulent motion. Thereafter, strength of the vortices was found to reach a maximum and decrease with further increase of the cylinder speed. Effects of adding an axial discharge between cylinders were also studied. Under certain conditions, boundary layers formed on Presented with permission of The Institute of Paper Chemistry, under supervision of Curtis L. Brown, editor of IPC Bulletin. Photostats or translations of original reports available at reasonable cost by writing Eugene Bunker, librarian, Institute of Paper Chemistry, PO Box 498, Appleton, Wis., U.S.A.

cylinder walls due to through-flow, thereby confining Taylor vortices to central part of the annulus. However, with higher cylinder speeds and corresponding stronger vortices, these boundary layers were obliterated. Better understanding of secondary flow has been obtained.

Accelerating Sulfite Digestion

SCHMIED, J. Zellstoff u. Papier 8, no. 6: 222-5 (June 1959). [Ger.] Abstr. Bull. I. P. C. 30:633-34.

Theoretical considerations of penetration, capillarity and diffusion phenomena, notably the Lucas equation and Fick's diffusion law, indicated that improved and faster chip impregnation with cooking liquor can be obtained by a two-stage treatment as follows: In the first stage chips are contacted and kept in contact with cooking liquor preheated to an elevated temperature (75-90°C.) at atmospheric pressure, so that air in all capillaries (not just the wider ones in the springwood) is displaced spontaneously and continuously by sulfur dioxide and VW. In the stage, hydrostatic pressure is increased and maintained at a maximum so that vapor condenses and sulfur dioxide re absorbed; hence, cooking liquor finds little resistance and can penetrate chips more speedily, uniformly and completely than during conventional pressure impregnation. This method is claimed superior to pulsating-pressure methods (such as the Vilano process) that may damage digester linings, as well as to the acceleration of the cooking process by means of a final temperature increase (as in the Va-Purge process), which can seriously reduce the reactivity of lignin to sulfonation.

Refining Trials—German

Schlechter, Peter. Das Papier 13, no. 7/8: 162 (April, 1959). [In German] Abstr. Bull. I.P.C. 29: 1752.

High cleaning action (complete shive removal) combined with low heating effect (fibrillation and fibershortening) are the advantages claimed for the laboratory-size (10-12 liter capacity) rapid-action Turbo-Pulper manufactured by Obkircher KG in Ditzingen (near Stuttgart). Refining times for 12 different pulps (270-360 g. ovendry basis) ranged from 3 to 20 min. at 17-28°C. and 3-4% consistency.

Reducing Agents in Sulfate

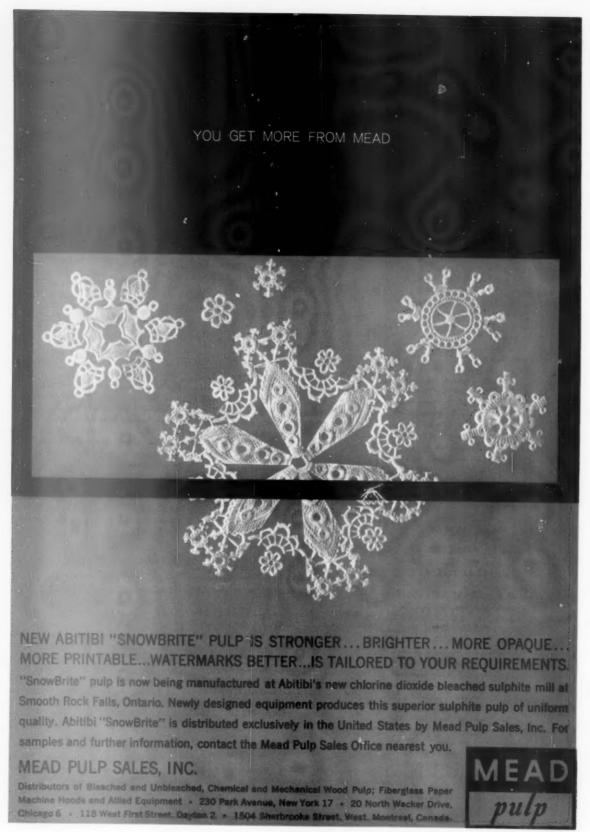
Hartler, N. Svensk Papperstidn. 62, no. 13: 467-70 (July 15, 1959. [Eng.; Swed. and Ger. summaries,] Abstr. Bull. I. P. C. 30:631.

Addition of 1% sodium borohydride to kraft white liquor (based on ovendry wood weight) increased pulp yield by about 10%. Pulp contained up to 80% of the glucomannan originally present in the wood, as compared to about 30% for ordinary kraft pulp. This is attributed to the reduction of carbonyl groups by the borohydride and to the resulting decrease in the solvency of the polysaccharides, notably the glucomannan. Xylan content was lower than in an ordinary sulfate pulp, probably because the fibers-having retained most of their glucomannan-had a lower tendency to reabsorb the dissolved xylan. Addition of borohydride did not affect strength, bleachability and bleached yield of the pulp. Pulp was brighter and more readily beaten than ordinary kraft pulp.

Sprucewood Degradation

Grohn, H., and Deters, W. The degradation of sprucewood by Lenzites saepiaria. Holzforschung 13, no. 1: 8-12 (April, 1959). [German] Abstr. Bull. I.P.C. 30: 146.

The methoxyl content of alcoholextracted and Klason lignin from fungus-decayed sprucewood decreases practically linearly with the extent of wood degradation, the slope of the curve being reproducible. The degree of wood disintegration is defined by the actual content of Klason lignin in the attacked wood. It is concluded that the alteration of lignin expressed by the methoxyl decrease is largely the result of enzyme activity. The decayed wood is shown to contain ethersoluble lignin residues. The native character of lignin liberated enzymatically according to Nord and Schubert is denied, and that of Björkman (milled-wood) lignin is questioned.





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Your Material Handling Equipment

Towmotor Corporation and its subsidiary Gerlinger Carrier Company offer you three simple ways to improve your material handling operations . . . realize immediate savings . . . and accomplish this with little cash outlay.

- You can put Towmotor-Gerlinger material handling equipment—fork lift trucks and material carriers—to work on a continuous round-the-clock basis through the Lease-A-Truck Plan. No down payment—no working capital tied up—just a small monthly charge.
- You may also rent Towmotor-Gerlinger equipment on a short-term basis—as peak or seasonal demands require. You will start lowering handling costs immediately.
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Complete factory supervised maintenance can be included in any of the above plans.

You'll find Towmotor-Gerlinger handling economies consistently pay the small monthly cost many times over. For complete information on any of these profitable, money saving plans, write or contact Towmotor-Gerlinger Rental Division, Towmotor Corporation, Cleveland, Ohio.



FORK LIFT TRUCKS, CARRIERS AND TRACTORS SINCE 1919

Gerlinger Carrier Co. is a subsidiary of Towmotor Corporation



PUGET PULP

IS UNIFORM

Bleached Sulfite Pulp

PUGET SOUND PULP & TIMBER CO. BELLINGHAM • WASHINGTON

WHITE

STRONG

CLEAN





"THE TIME HAS COME," THE WALRUS SAID, "TO TALK ABOUT*

in paper coatings. And the man to talk to is your Cyanamid Pigments representative.



Titanium Dioxide



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Here are some outstanding features that make them ideal for industrial plants, pilot plants, and for research, test, and laboratory use:

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- 3. Easy to use and service-little or no maintenance required.
- 4. Rugged construction unaffected by vibration.

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MODELS FOR EVERY PURPOSE. Dynamaster Instruments are now available as:

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- B. One- and two-pen round-chart recorders.
- C. High-speed recorders (0.4 second).
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- E. Extended range recorders.
- F. Adjustable span and zero recorders.
- G. Miniature 3-inch strip-chart recorders.
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- Pneumatic controllers in both strip- and round-chart models
 —all types of control action and time-program control.
- J. Instruments for electronic measurement—pneumatic transmission of reading by 3-15 psi signal.
- K. Round chart program controllers.
- L. Telemetering transmitters.
- M. Drum-type precision indicators.
- N. Multi-bank recorder—will accept up to 200 separate inputs and record them on 12-inch wide strip chart.
- O. Relay-rack mounting models most models available in case that fits standard 19" relay-rack without modification to instrument or rack, without panel-cutting or masking.

Bristol Dynamaster Potentiometer and Bridge Instruments can be equipped with analog-to-digital encoders of various types for digital readout and computer use. For complete details, write for Bulletins P1245A, P1270, P1271, P1242, and P1282. The Bristol Company, 142 Bristol Road, Waterbury 20, Conn.

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Dynamaster* Electronic Potentiometer or Bridge—records on 11-inch, 120-footlong strip chart.



Dynamaster® Electronic Potentiometer or Bridge—records on 12-inch round chart, indicates on extra-large scale.



RECORDE



INDICATO

Plug-in Miniature Electronic Dynamaster Potentiometer and Bridge instruments—Only 5" x 51/8" panel dimensions; ideal for graphic panel instrumentation.

BRISTOL

TRAIL-BLAZERS IN
PROCESS AUTOMATION

AUTOMATIC CONTROLLING, RECORDING
AND TELEMETERING INSTRUMENTS

Langston Leader MILL EDITION SAMUEL M. LANGSTON CO. CAMDEN 4, N. J. PAPER MILL EDITION

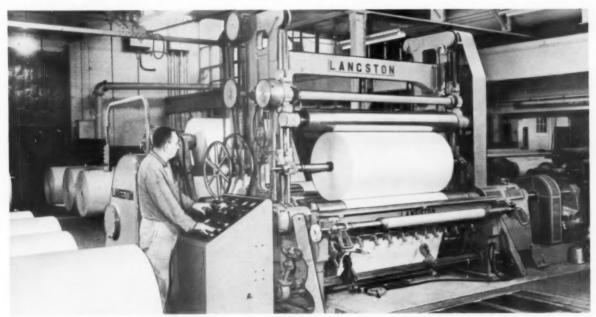
APRIL, 1960

Published for the information of paper and board mills

VOL. 2, NO. 3

45 Rolls Daily

HOW REWINDER SALVAGES NEWSPRINT CULLS



ROLL OF NEWSPRINT is rewound on new Langston slitter and winder at Ontario Paper Company, Inc., Ltd.

New Langston Equipment At Ontario Paper Meets Requirements of High Speed Presses

The high speed presses of the Chicago Tribune, one of the great newspapers of the United States, pour out nearly 900,000 newspapers daily and consume about 300 rolls of newsprint every 24 hours.

Source of the paper is the Ontario Paper Company, Inc., Ltd., Thorold, Canada, where 210,000 tons annually flow from five newsprint machines plus the production of a sixth under contract to the neighboring Beaver Wood Fibre Company, Ltd.

About 10 percent of this production now is slit and rewound in a salvage operation on a new Langston slitter and winder, an 82" machine turning out about 45 shipping quality rolls daily in a three-shift-a-day, six-day-a-week operation.

A roll of newsprint must meet exacting requirements. It needs a hard tight core so that when subjected to a sudden quick start in the newspaper presses, to set the roll spinning for flying splices, it will not loosen around the core.

Within the roll itself, splices must be properly made to insure that the web doesn't part under high speed press operations.

The newsprint must be free of dust or it will fuzz the printing plates and give poor printing. There must be no flat spots, which can develop from handling when soft areas occur in the roll; no slime holes; no wrinkles; no buttonholes; no cockles from the calender; no telescoping.

Any of these conditions can cause paper breaks or force press slowdowns

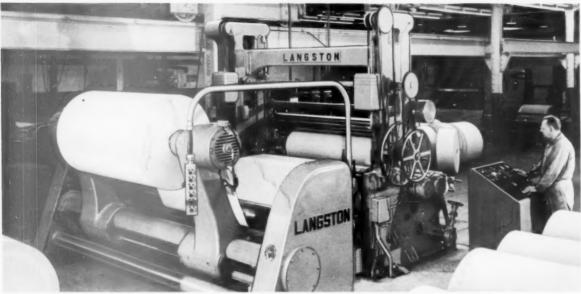


QUALITY REWIND. Alex Gavard, left, finishing room superintendent, notes approvingly to Langston sales engineer Al McCully that roll is tight, has no annular rings or offsets.

—and spell trouble on a newspaper with a hot story on front page and an avid public waiting for the next edition.

Says Alex Gavard, finishing room superintendent, a 40-year veteran at Ontario Paper:

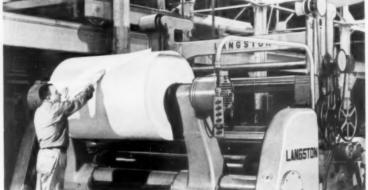
"The newsprint rolls turned out by the Langston winder are tight, hard and evenly wound. Management is quite (Continued on Page 2)



SHAFTLESS BACKSTAND is equipped with side register control insuring perfect edge in rewinding telescoped rolls.



ENGAGING ROLL. Winderman Mike Nogas by pushbutton prepares to grip roll and raise it into position.



READYING THREADUP. Nogas folds end of sheet, preparatory to setting up for rewind.

Winder On Newsprint

(Continued from preceding page)

pleased with the winder's performance. Depending on the rolls, the winder operates between 2500-3500 feet perminute.

"We run culled rolls from six newsprint machines, slitting and rewinding as required, or making turnovers to put the wire side inside for rotogravure. Rolls may range in width from 261/4" to 761/4" and in diameters from 38" to 40".

"Some rolls are only rewound—to improve quality. Others are trimmed to desired size or bigger rolls are made from smaller ones, when the paper machine is hard pressed. Basically, it's a salvage operation, and a valuable one in the amount we are able to salvage."

The machine is a standard Langston rewinder. Patented, fixed angle, shear cut slitters are simple and rugged and facilitate setup. The fixed shear angle minimizes the hazard of blade chipping and wear caused by improper setup.

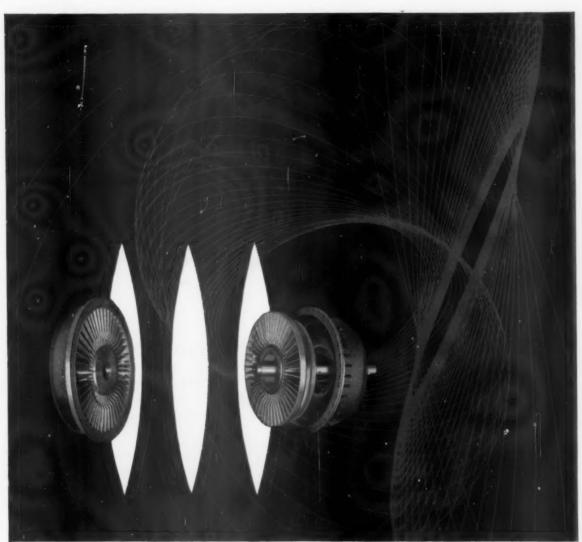
The equipment's power driven cutter heads and cutters are a Langston patented precision-made type, guaranteed to eliminate annular rings on the rewound roll and run true within 0.001".

The winder is equipped with braking on the rider roll cross shaft assembly

to insure precise maintenance of correct downward force, regardless of the roll diameter, and uniform density throughout the roll. Hydraulic roll ejection eases the job of the operator, speeds his work.

The unit includes a Langston hydraulic shaftless unwind stand equipped with a side register control system to insure a perfect edge in rewinding slipped or telescoped rolls.

It may seem far removed from space age headlines, but in its own required way, Langston's rewinder plays its part in helping Ontario Paper and the Chicago Tribune speed fresh news to its millions of readers.



Gýrol_® Fluid Drive gives you stepless, adjustable speed control...cushions shock

Stepless speed regulation as close as you need makes Gyrol Fluid Drive ideal for pumps, rewinders, slitters, conveyors, mechanical draft fans, and other pulp and paper mill applications. The smooth cushion of power-transmitting oil protects driving and driven machinery from shock. No-load starting allows simplification of motors, starting equipment. Ask a product specialist from our nearest office about Gyrol Fluid Drive. American-Standard* Industrial Division, Detroit 32, Mich. In Canada: American-Standard Products (Canada) Ltd., Toronto, Ontario.

^{*} American Standard and Standard & are trademarks of American Radiator & Standard Sanitary Corporation



What's the best way to bleach cold caustic pulp...

TOWER or REFINER?

Let Du Pont—the producer of both hydrogen peroxide and sodium peroxide—help you make this key decision

You may save thousands of dollars in capital investment and chemical cost if you make the right choice between bleaching in a refiner or in a tower.

Du Pont has a thorough working knowledge of both systems and, as the producer of both sodium peroxide and hydrogen peroxide, can tell you which peroxide or combination of peroxides is best for you.

Du Pont technical men will work with you and the equipment manufacturer of your choice to obtain the best peroxide bleaching process for your cold caustic pulp. They may recommend refiner bleaching requiring a small investment for peroxide solution make-up equipment with possible brightness increases of up to 20 points . . . or if your operation

calls for it, they may recommend tower bleaching. When combined with Du Pont's acidification process and a peroxide treatment, tower bleaching can increase brightness up to 35 points.

Add Du Pont's experience to your own, and you're sure to make the right choice. Call your Du Pont representative; he will be glad to discuss any bleaching problem you may have.

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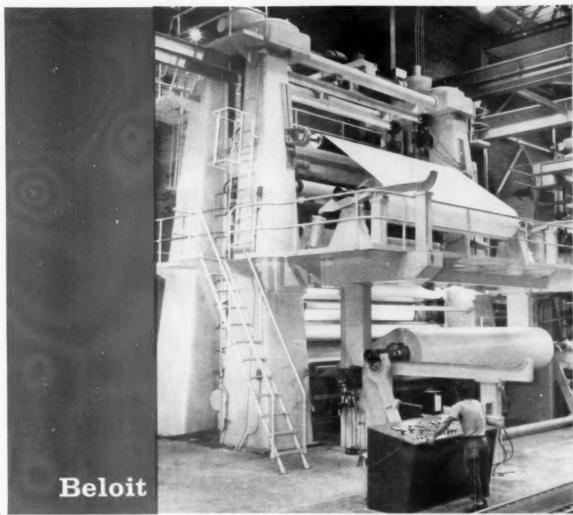
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DU PONT PEROXIDES

SOLOZONE® sodium peroxide • ALBONE® hydrogen peroxide for better bleaching of groundwood—sulfite—kraft—cold soda



ELECTROCHEMICALS DEPARTMENT, E. I. DU PONT DE NEMOURS & CO. (INC.), WILMINGTON 98, DELAWARE



International Paper Co., Hudson River Mill, Palmer, New York

high-speed supercalenders

Rugged, dependable, compact . . . Beloit supercalenders are outstanding performers in the calendering of all grades of paper. Their practical design meets the most exacting demands for supercalendering in all widths and at speeds up to 2500 fpm. Features that contribute to Beloit performance are: resilient air-cushioned loading, quick roll change, renewable ways, fully adjustable gibs, complete unwind and rewind tension control, center or surface wind, special sheet threading arrangements, and positive high-speed lifts.

Why not discuss your supercalendering with a Beloit Sales Engineer? You will find his suggestions helpful. Beloit Iron Works, Beloit, Wisconsin.

your partner in papermaking





DESIGNED...TO GIVE MORE CHLAN

Synthetic Reinforced Dryer Felt

RICHLAND 343 combines maximum drying efficiency with the stamina and staying-power of a "marathon runner." It's engineered to endure longer runs where more mileage and real wear-resistance are needed. RICHLAND 343 is a sturdy, fully stabilized felt, constructed to withstand the destructive effects of high chemical concentrations and a great degree of mechanical abrasion. At the same time, it provides the matchless drying characteristics available with cotton felts. Reinforced with synthetic fibers in the warp and filling, RICHLAND 343 will maintain its rugged effectiveness day after day . . . week after week, frequently outrunning asbestos felts and staying on the job so much longer than cotton felts, that it reduces the cost per ton of paper made. Sold only pre-stretched and pre-shrunk, available with or without clipper seams.

MOUNT VERNON DRYER FELT FAMILY RICHLAND 343 is just one of Mount Vernon's full "family" of scientifically designed dryer felts. There's an individual felt for virtually every paper machine position and every paper-making need.

UNIFORMITY Makes The Big Difference In Industrial Fabrics

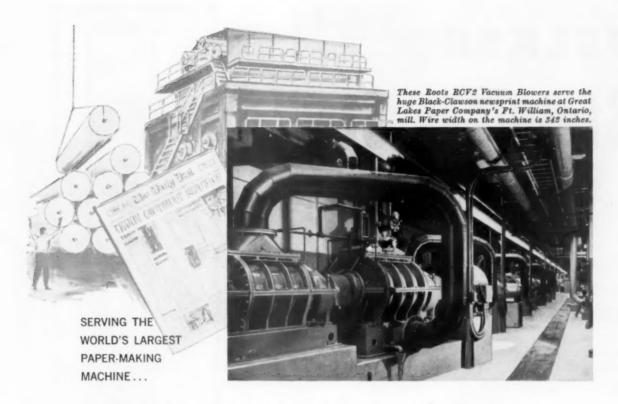


Main Office: 40 Worth Street, New York, N. Y.

Another Mount Vernon Dryer Felt Success Story ...

Felt Success Story...

A large producer of newsprint discovered that a tougher, more durable felt was needed for the top position on one of his machines... a felt that would withstand high chemical concentrations and speed while still providing efficient drying. Machine speed was 2200 feet per minute with a steam pressure of 40 lbs. Under these conditions, average all-cotton felts lasted approximately 75 days. Mount Vernon engineers recommended RICHLAND 343, a synthetically reinforced dryer felt designed to yield more mileage in hard-working positions. Result ... 120 days of highly effective running. RICHLAND 343 turned in an outstanding dryer felt performance and remained on the job 60% longer.



ROOTS VACUUM BLOWERS

HELP MEET DEADLINES IN NEWSPRINT PRODUCTION

At a 2,250-feet-per-minute clip, the biggest paper-making machine in the world is recling off newsprint for Great Lakes Paper Company . . . aided by dependable and efficient Roots Vacuum Blowers. The giant machine, called Jupiter, is in the paper company's mill at Ft. William, Ontario. The Roots units are RCV2 vacuum blowers, each rated at 250 bhp and with capacities of 5,360 cfm.

Five important operating factors contributed to Great Lakes' choice of the Roots Vacuum Blowers:

- Reduced horsepower at high speeds provides power savings of as much as 25%,
- The minute, carefully controlled clearance between rotors and case eliminates wear and lengthens service life.
- Minimum sealing water requirements provides further economy.
- Small floor space and foundation requirements, plus easy installation.
- · Roots-Connersville provides a wide range of

sizes—in both single-stage and two-stage units—to match paper mill requirements.

Such factors as these—plus a century-old Roots-Connersville tradition for proved design, precise craftsmanship and technical assistance before and after purchase—have made Roots equipment a proven choice throughout the paper industry. For example: Roots Vacuum Blowers provide all vacuum requirements for the world's widest Yankee tissue machine in the Crown-Zellerbach Company plant at St. Helen's, Oregon, and for the world's largest and fastest coated paper machine in the St. Francisville Paper Company's Louisiana mill.

Whatever your vacuum requirements, think first of the company first in the field. Call your Roots-Connersville field engineer for details. Or write for free Bulletin VP-158,

If you have other air and gas handling requirements remember, too, that only Roots-Connersville provides a full selection of rotary positive, centrifugal and Spiraxial® equipment designs.



ROOTS-CONNERSVILLE BLOWER DIVISION

460 Willow Avenue, Connersville, Indiana In Canada—Roots-Connersville Blower (Canada), Ltd. 629 Adelaide St., W., Toronto

Stainless Steel Tubes

44'0" long without a circumferential joint.

The Requirement:
1 length 44'0" - Continuous, no tranverse welding permitted, 6" IPS Schedule 5.

Stainless Steel Type 304 Extra Low Carbon — Heliarc, Shielded, Welded

Delivery Requirement: Seven weeks at assembly site

End Use: Nuclear Equipment. Our Performance Story: Tube met full specifications.

OD — as specified.

Stainless Steel — Extra low carbon — as specified.

Length -— Full 44'0" — No tranverse joints — as specified.

Camber — Within tolerances — as

Delivery — To assembly site in five weeks.

When you have an unusual requirement let us demonstrate our ability to serve you. Ordinary requirements for standard tubing sizes are handled promptly

FELKER BROS. MANUFACTURING CO.

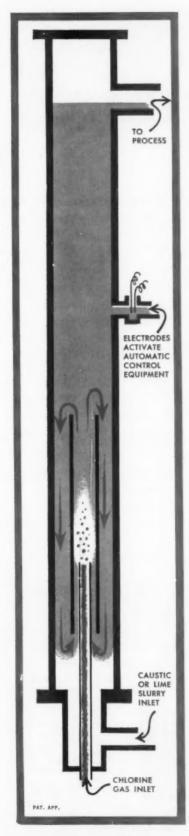
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26

April 1960 - PULP & PAPER



Continuous Hypochlorite Reaction Tower

...a superior system developed by Pennsalt to solve an industry problem

uniform bleach liquor produced in less space...at less cost than by conventional batch system

To meet the request of the pulp industry for a simple and reliable continuous sodium or calcium hypochlorite preparation system, Pennsalt engineers applied the well known basic principles of batch preparation.

- 1. The preparation of the alkali prior to chlorination at constantly uniform strength.
- Reaction column design for rapid and complete mixing and reaction of the chlorine and alkali.
- Immediate and continuous discard of grit and inert materials removed in the centrifugal clarification of calcium hypochlorite.

It is known that the velocity of reaction of chlorine and an alkali is dependent upon the hypochlorite ion content. The Pennsalt Hypochlorite Reaction Column was designed to incorporate this principle. The rapid upflow within the draft tube causes recirculation of hypochlorite to the base of the column to mix with inflowing alkali. The resulting alkaline hypochlorite reacts instantly with the chlorine in a short reaction zone enabling the electrodes to sense system changes almost instantaneously and the control instruments to take prompt corrective action.

Ask Pennsalt Technical Service for help in solving your particular problem. Write for free Technical Bulletin H-2024. Pennsalt of Washington Division, PENNSALT CHEMICALS CORPORATION, Tacoma 1, Wn.

References: TAPPI Vol. 38 No. 10; Paper Trade Journal, May 7, 1956; Pennsalt Technical Brochure No. 21
Reference Installations (Calcium Base): Longview Fibre Co.; St. Helens Division, CZ Corp.;
Publishers' Paper Co.; Simpson-Lee Paper Co.
(Sodium Base): Cia Industrial San Cristobal S. A.; Waldorf Paper Products Co.; Weyerhaeuser Co.

Pennsalt of Washington Division

TACOMA 1, WASHINGTON

Offices and Plants: Los Angeles and Fresno, Calif., Philadelphia, Pa., Partland, Ore., Vancouver, B. C. (CRestwood 8-1412)

PENNSALT CHLORINE and CAUSTIC SODA are made at Calvert City, Ky., Portland, Ore., Tacama, Wash., Wyandotte, Mich., and Mexico City.





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Our booklet—"The Inside Story of Outside Help"—describes Ebasco's services and how they may be of use to you. For a copy, write Ebasco Services Incorporated, Dept. R, Two Rector Street, New York 6, N. Y.



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New Cold Caustic **Bleach Process**

Looking for a way to use greater amounts of low-cost, more plentiful pulp-without capital investment for bleach equipment? Then let a Becco Sales Engineer show you our new technique® which allows you to bleach in the same equipment regularly used for the manufacture of cold caustic

In this new process, peroxide bleach liquor is added at the Bauer Refiner, and bleaching occurs during the refining operation. Bleach response depends on refiner densities.

Up to 20 points brightness increase has been obtained in commercial operations to date, and with no additional steam costs, no holding time, and no excessive chemical costs.

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Need a Bleach Plant in a hurry?

By now, you've probably heard about Becco's Dryer Steep Bleaching Process for insuring brightness permanence by spraying Hydrogen Peroxide across the pulp sheet ahead of the dryers. And you probably know that although the process is patented, Becco will grant a perpetual license for just \$1.00.

But there may still be a question in your mind as to how you can prove this out in your own mill how you can set up a bleach plant

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Here's an opportunity for you to prove to yourself, quickly and easily, that this Becco process will maintain your layboy brightness level - even improve it - through shipping and delivery.

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- No. 65 Peroxide Bleaching of Southern Pulps.
- No. 66 Becco Laboratory Procedures for Pulp Bleaching, 1955 Ed.
- No. 91 Peroxide Bleaching of Chemi-Mechanical Hardwood Pulps.
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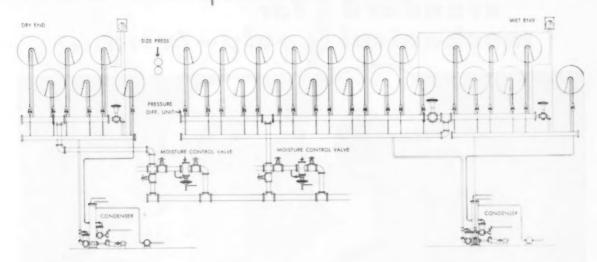
Honeywell offers you far more than just instruments. You can get all or any part of these time and money-savers. Add to these services our many years of engineering and application knowhow. You'll see why Honeywell is your best buy in pulp and paper instrumentation, whether you deal directly with us or through your consultant or contractor.





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- Steam is discharged from only the first wet end dryer, assuring maximum steam economy.
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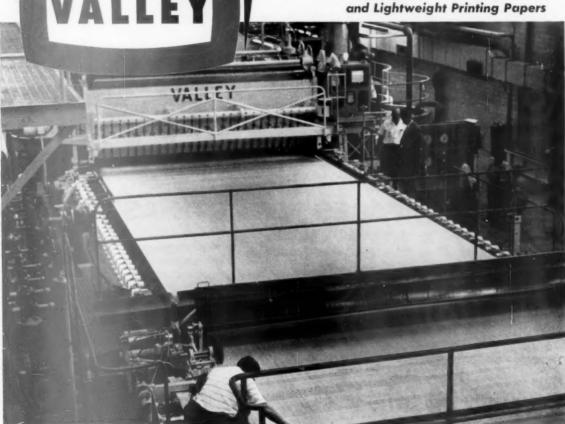
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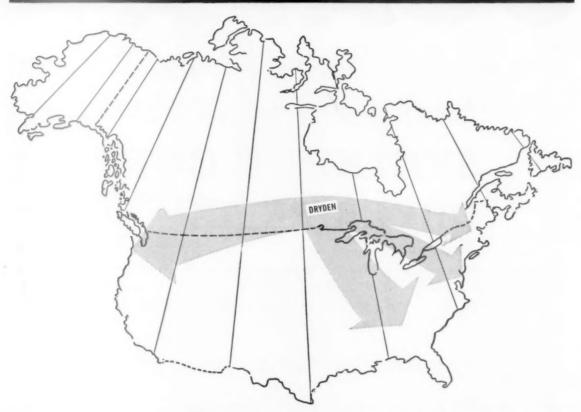
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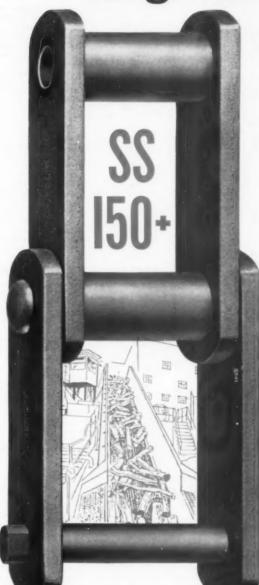
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Tough as they come



for pulpwood handling

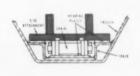
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SHOCK ABSORBER. S-10 attachment for SS-150+ chain has broad sliding surfaces that contribute to long wear-life of both track and chain. Impacts are absorbed by track, not chain joint.



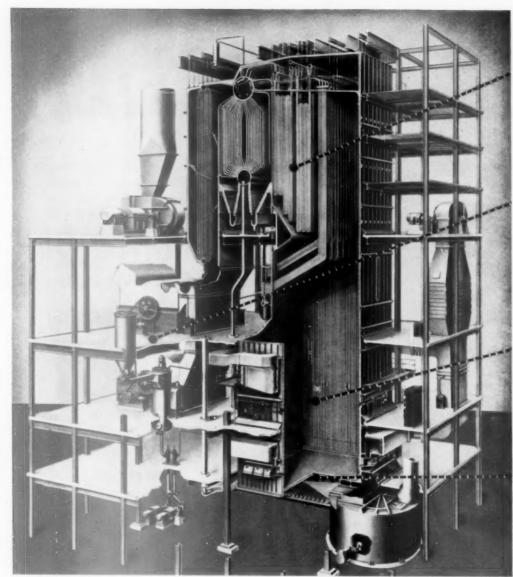


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PULP & PAPER - April 1960



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The widely spaced self-cleaning panel type superheater and screen — developed by C-E—provides no foothold for slog. Gas passage is smooth and unimpeded. Slag build-up is minimized, gas flow and heat absorption is uniform across the width of the furnace, surfaces are cleaner and soot blower action is more effective.

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Furnace stability is assured because evaporalive heat is controllable to compensate for density differences in incoming liquor, regardless of limited multiple-effect evaporator copacity. Liquor temperature is controlled accurately and automatically, and fuel-air ratios are automatically proportioned to maintain the furnace atmosphere required for high reduction.

3. TANGENTIAL AIR

Secondary air is introduced tangentially above black liquor sprays. Fuel-air mixture is intimate and complete. Gas velocity upward through the sprays is decreased, ash entrainment in gases leaving furnace is reduced. Combustion is completed in lower part of furnace, furnace exit gas temperature is reduced.

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A layer of chilled smelt is held in contact with the water-cooled furnace floor. Molten smelt rides on top of the chilled layer and leaves the furnace without touching hearth refractory or floor tubes. The cost and inconvenience of downtime due to hearth failure is eliminated.

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Until 1954, 350 to 400 tons was considered the size limit for chemical recovery units. Technical obstacles prevented bigger, more economical installations. Then, in October, 1954, C-E began taking orders for 500-ton units and larger! C-E breakthroughs had overcome the indus-

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You can benefit from this extensive experience—by working with C-E on your chemical recovery problems. Call the C-E office nearest you, or contact the C-E Paper Mill Division in New York.

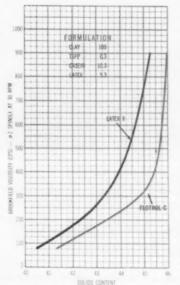
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Here's the answer to lower viscosity coating! With FLOTROL C you can formulate safely with a much higher solids content—yet keep viscosity way down. What's more, you get faster coating...quicker, more economical drying as well.

Use FLOTROL c in high solids formulations for high shear coaters like transfer roll and trailing blade. Use FLOTROL c in low solids formulations for air knife and reverse roll coaters, too.

Either way, the low pattern characteristics of FLOTROL c mean smoother, more uniform coatings—plus a high degree of gloss with less calendering. To get the full story, write to us, attention Organic Chemicals Sales, at the address below.

CHECK THESE 5 BIG ADVANTAGES OF FORMULATING WITH FLOTROL C

GRAPH OFFERS SOLID EVIDENCE that FLOTROLC gives lower coating viscosity. Viscosity reduction can be achieved in a wide variety of formulations—including casein, soya protein and starch—and with widely varied latex content. Consistently lower viscosity of FLOTROLC colors at high solids means better all-round results... saves drying time, too.

in higher solids content for faster coating, heavier coating weights, less heat for drying in lower pattern for smoother, more uniform coverage cuts amount of expensive ingredients needed to achieve desired fluidity in permits achievement of desired viscosity with less latex in means faster screening and preparation of coating color

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The new Impco Centrifugal Pulp Screen is the latest example of the progress made toward the ultimate in low cost quality screening. This screen incorporates many improved principles and features such as:

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 — a tangential inlet which changes flow direction from linear
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 a special stator which provides uniform internal dis-
- tribution of pulp;
- a patented high-efficiency rotor which increases capacity without additional horsepower;*
- a bottom accepted stock outlet permitting all sub-floor piping;
- a full length quick-opening door for routine accepted stock sampling;
- an accessible rejects outlet for tailings inspection or sampling.

These features are resulting in peak capacities and high discharge consistencies at lowest horsepowers. Reject richness is readily controlled. Engineered simplicity is characteristic of the entire line of Impco Centrifugal Screens which require very little operating attention and mechanical maintenance.

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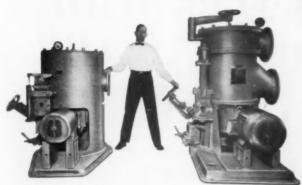
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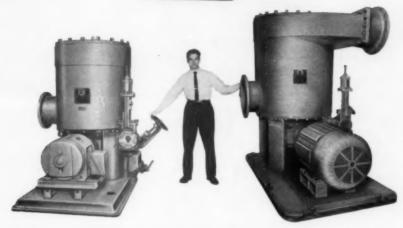
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Can benefit from



Pressurized Screening





4 SELECTIFIER® SCREEN SIZES COVER ALL APPLICATIONS

Model 12-P 1200 GPM—for low tonnage Fourdriniers and individual vat application on small capacity cylinder machines

Model 24-P 3800 GPM—used on all paper grades—and in pulp mill hot stock refining and pressure washing systems

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All models deliver the well-known Selectifier Screen benefits
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Have your Shartle Sales Engineer give you full information

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Single Source for Stock
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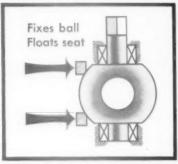
Can A Ball Valve Operate, Cycle After Cycle, With No Maintenance At All?

Read this remarkable answer, and discover an amazing engineering feat.

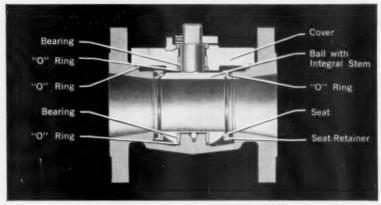
As most engineers know, ball valves offer a number of distinct advantages over all other types of valves . . . 90° on-off, minimum pressure drop, positive on-off indication, no lubrication, and compactness. In common with other valves, however, the design was insufficient to overcome the problem of continual maintenance.

Four years ago, this problem was faced by Hydromatics, Inc. in the valves that they produced for use in missiles, aircraft and ground support systems. Then, as today, all other ball valves were built with a ball that floated in its socket, and sealed by being forced against its seat by the pressure in the line. This caused seat distortion which made early replacement necessary.

Hydromatics tried a different approach. Rather than use the traditional floating ball, their engineers fixed the ball in bearings.



In the bearing-fixed FLO•BALL valve all pressure forces exerted on the ball are transmitted to low-friction bearings, thus eliminating down-stream seat distortion due to ball load. The pressure balanced seat, with its teflon sealing surface, is continually self-adjusted by the O-ring in the seat retainer.



This O-ring acts as a self-energizing force that keeps the teflon seat always in contact with the ball. This insures positive sealing without seat distortion, and minimizes seat-resisting frictional forces. The combination of these low frictional forces results in low operating torque and extremely long seat life.

The bearing-fixed FLO•BALL valve proved itself immediately. Hundreds of missile and spacecraft systems, previously impossible, were made possible with these valves. The X-15, America's first manned space vehicle, for instance, has a Hydromatics FLO•BALL valve at its heart. Since its inception, the FLO•BALL has been used in more varied applications than all other ball valves combined.

Now, after the toughest application testing in history, bearing-fixed FLO•BALL valves are being mass produced for industry. They are available for off-the-shelf delivery to standard ASA dimensions in semi-steel, carbon steel, stainless steel, and aluminum. They operate at pressures to 600 psi, temperatures to 400°F and hold vacuum to 10-6 mm. of Hg! The bearing-fixed FLO•BALL offers extra ball valve advantages. Top loading for easy access without removing the valve from the

line, plus three features that are absolutely unique! Self-adjusting seats which automatically compensate for wear, proportional sealing force which automatically increases with line pressure, and the lowest torque, by far, of any valve. These combine to make the FLO*BALL valve virtually maintenance-free!



How long does it last without maintenance? Frankly, we don't know, since the first valves we ever built are still going strong and outlasting other valve types by more than 10-to-1. But don't take our word for it. See for yourself. Call, write or TWX for further information.

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Livingston, New Jersey Telephone: WYman 2-4900 TWX-LIVINGSTON NJ 120

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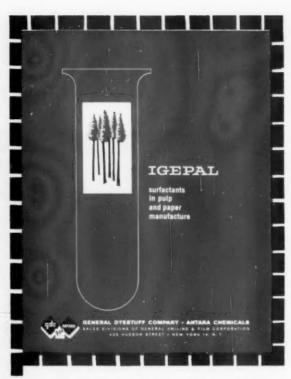
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This 24-page brochure describes the uses in pulp and paper manufacture of four IGEPAL surfactants:

IGEPAL CO-630, the universal surfactant, outstanding for efficient detergency, emulsification, dispersing, and wetting;

IGEPAL CO-610, the surfactant of comparable efficiency, used in place of Igepal CO-630 where a lowerfoaming product is required;

IGEPAL DM-710, the nonionic surfactant distinguished from these others by higher molecular weight and by unusual emulsifying properties and detergency;

IGEPALCO-210, the oil-soluble defoamer and co-solvent.

Your attention is called particularly to the section on the use of IGEPAL CO-630 IN FELT WASHING. Given are formulations for cleaning wet-end papermachine felts and suggestions (illustrated by diagrams) for installation of washing equipment.

This booklet will have day-by-day usefulness for you. Send for it today; use the accompanying coupon or your company's letterhead.



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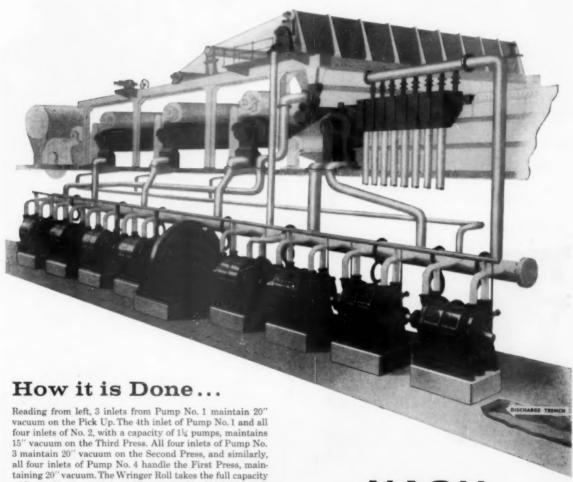
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Nash Vacuum Pumps of one size, driven if desired, by a single motor, will handle all of the varied vacuum and capacity requirements of an entire Paper Machine.

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NASH ENGINEERING COMPANY

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10" vacuum on the Wire Boxes.

of Pump No. 5, requiring 10" vacuum. The High Vacuum Couch Box takes a pump and a half, 4 inlets of Pump No. 6,

and two inlets of Pump No. 7, maintaining 20" vacuum. The remaining two inlets of Pump No. 7 maintain 10" vacuum

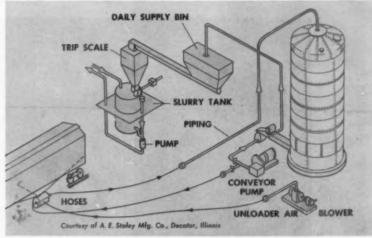
on the Low Vacuum Couch Box. Only one inlet of Pump No. 8 is required to handle the Felt Conditioners at 10" and the remaining three inlets of Pump No. 8 handily maintain



No matter what your product, process or problem involving white pigmentation, look to TITANOX® pigments and our technical service for the answer. Titanium Pigment Corporation, 111 Broadway, New York 6, N. Y.; offices and warehouses in principal cities. In Canada: Canadian Titanium Pigments Ltd.. Montreal.

Here's a TRIPLE-THREAT cost-saving system for handling bulk starches





A typical low air-volume pneumatic system for handling bulk starch with Permaglas Mechanized Storage Units. Shipped in hopper cars, starch is unloaded by air-activated gravity conveyors, and delivered by air to storage bin, and then to a daily supply bin through a hose and piping connected to the conveyor blower. Screw conveyor carries starch from daily supply bin to automatic scales which supply a continuous slurry make-up tank.

Permaglas Storage Structures ...mechanical "sweep-arm" bottom unloader ... pneumatic or mechanical conveying systems

Permaglas Mechanized Storage Structures offer a "dynamic challenge" to the higher cost, conventional methods used in handling and storing bulk starches—granular, grit, pearl, and powdered—the basic raw materials in paper, textiles, food processing, baking, confections and pharmaceutics. You can realize lower costs in your starch processing operations when slow and expensive methods are replaced with Permaglas Mechanized Storage Units, equipped with the exclusive "sweep-arm" bottom unloader, and an efficient pneumatic or mechanical conveying system. pneumatic or mechanical conveying system.

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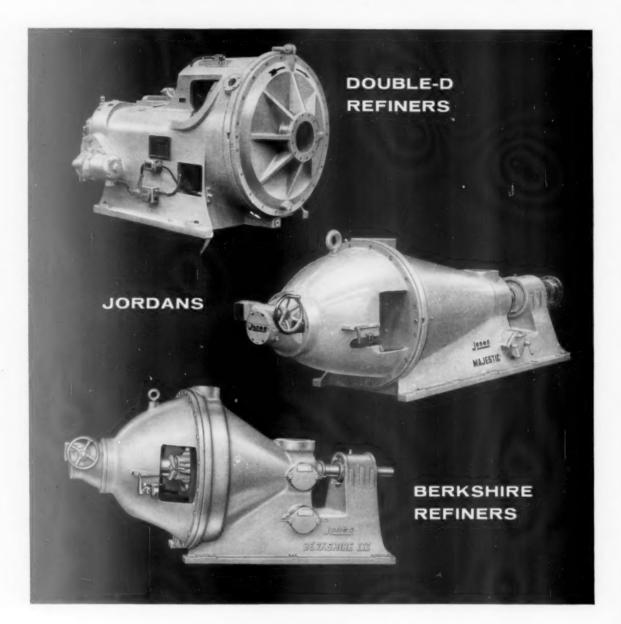
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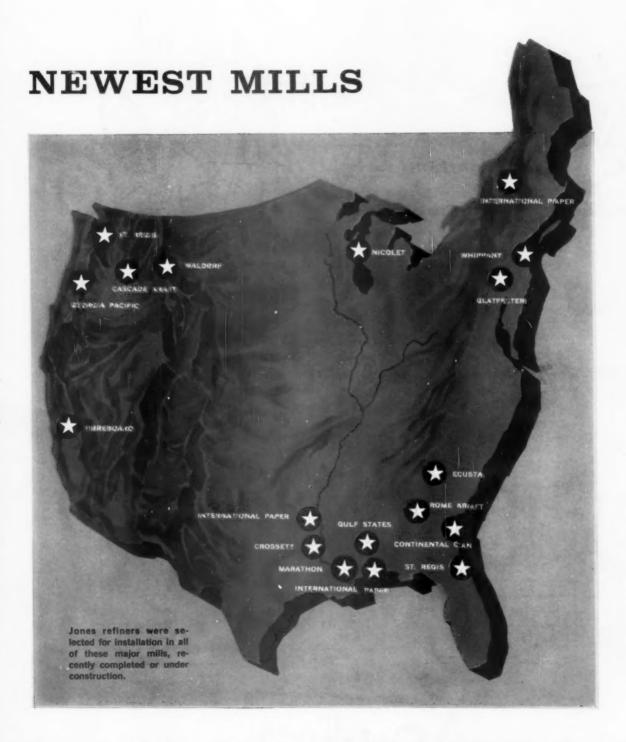
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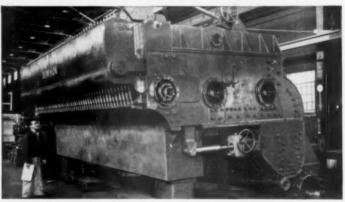
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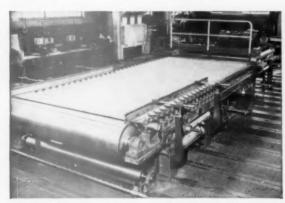
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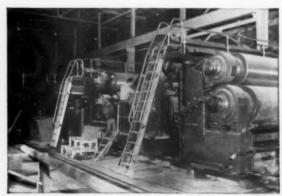
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DOMINION SUCTION ROLLS benefit from many years of experience and development and incorporate such features as open ended design for accessibility combined with anti-friction bearings, floating suction box tops and drilling patterns designed to reduce noise level and shadow marking. The shells can be provided in all sizes in bronze or forged stainless steel, the latter permitting the high line pressures available from Dominion oil-hydraulic loaded press sections.

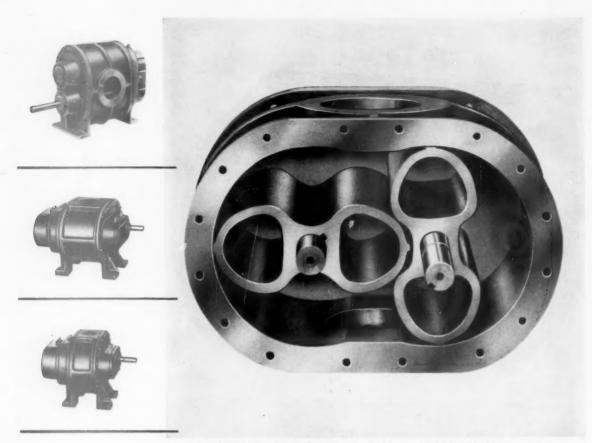


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The following direct colors can be used on continuous or batch coloring for producing a wide variety of white tints. These dyes have the necessary fastness properties for adaptability on book, bond, tissue and bleached board specialties.
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Sutorbilt blowers deliver air or gas at capacities up to 20,000 cubic feet per minute and pressures or vacuums up to 10 pounds. Design incorporates two figure-eight impellers which rotate in opposite direction and deliver a metered volume of air or gas.

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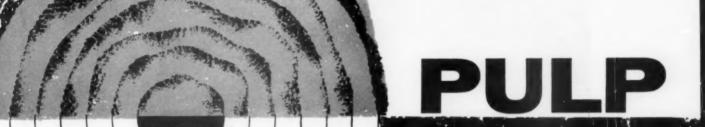


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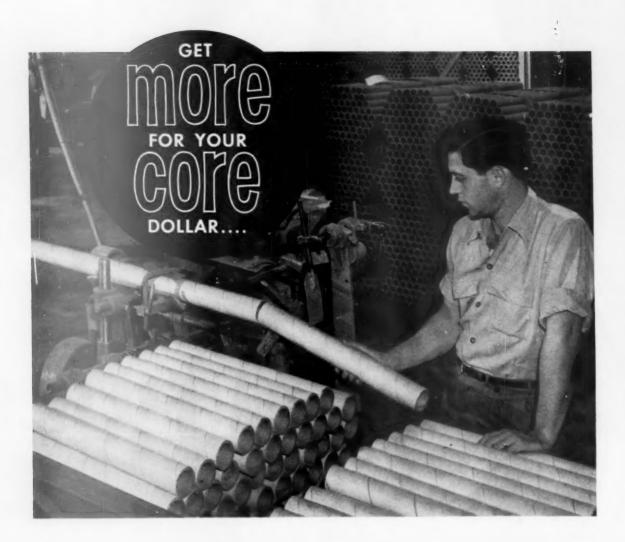


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This maintenance man's toolbox sums up the story of

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Even the standard products that Allis-Chalmers builds for the Pulp and Paper Industry are designed for the industry's special needs . . . and designed so routine inspection and maintenance are simply, quickly done.

And from no other manufacturer can you match the range of equipment available and benefit from Allis-Chalmers unit responsibility. Listed at right are some of the Allis-Chalmers products built to serve you economically throughout the plant—from pulp to finished paper products.

For service that matches the quality of the equipment, call the A-C representative near you. Or write Allis-Chalmers, Milwaukee 1, Wisconsin.

"Teamed" Equipment from A-C... Electrical Generation and Distribution Equipment. Pumps, Motors, Motor-Generators, Motor Control, Screens, Compressors, Vacuum Pumps, Water Conditioning, Lime Kilns, and Material Handling Equipment. HOW SOUTHWORTH STRADDLE TABLES*







Photos Courtesy Consolidated Water Power & Paper Co

The highly mechanized layout illustrated actually increased trimmer output by 150% . . . for by its simplification the feeding of untrimmed paper and the piling of trimmed paper were expedited, enabling the trimmer to operate nearer to capacity.

This is another typical example of how a Southworth installation aids in cost reduction by a better use of existing facilities, by minimizing waste through better handling and by the improvement of safety conditions for the workers.



60

For Details Write or Call Collect:

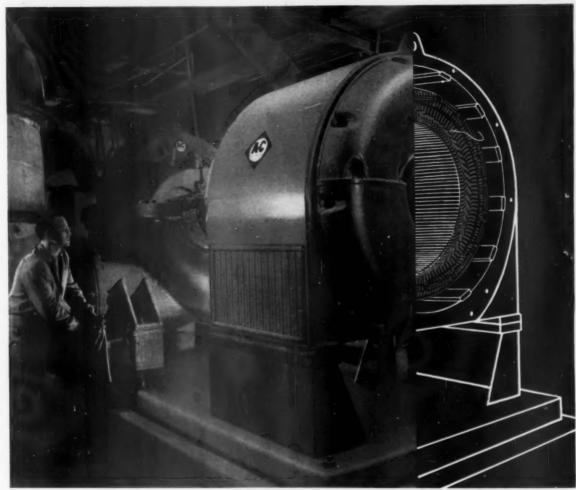
SOUTHWORTH MACHINE CO.

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ALLIS-CHALMERS





Silco-Flex insulation in this paper mill application has solved the problem of excess moisture — one of the worst enemies of motor insulation.

Your major motor investments are protected by Allis-Chalmers

invisible standards of perfection

Allis-Chalmers motors prove the value of thinking beyond established design standards. This thinking, applied to research, development and manufacturing, has led to advanced design features which mean greater application versatility, exceptional reliability and extended motor life. These are invisible standards of perfection you get with Allis-Chalmers motors.

tended motor life. These are invisible standards of perfection you get with Allis-Chalmers motors.

Silco-Flex insulation, for example, has completely changed the rules on open-motor application. It is impervious to moisture, oils, and most acids, alkalies and solvents. It is resistant to abrasion, and is capable of withstanding high temperatures. Its resilience provides durability to withstand shock and vibration.

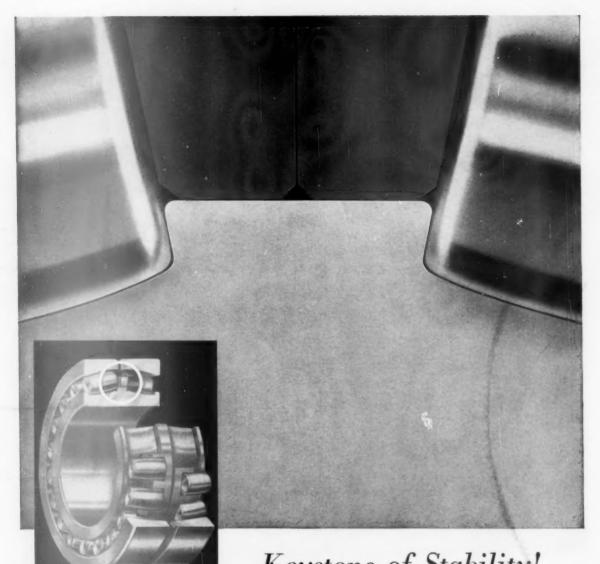
Super-Seal motors, with Silco-Flex insulation, have proved themselves for more than five years under the most severe conditions in industry.

Advancements such as capsule bearings, split end housings, and *Integrated* field coils (for synchronous motors) add to the superior performance of *Super-Seal* motors.

They contribute to the invisible standards that protect your motor investments year after year — cut replacement costs — assure uninterrupted production.

To learn more, call your nearby A-C representative, or write Allis-Chalmers, Power Equipment Division, Milwaukee 1, Wisconsin.

Super-Seal and Silco-Flex are Allis-Chalmers trademarks.



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Spherical Roller Bearings Offer:

- inherent self-alignment
- · conformity of rollers to raceways
- integral center guide flange for stability
- stability

 * positive roller guidance
- land-riding bronze cages
 maximum radial and thrust
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- controlled internal clearance
 electronically selected rollers
- · even load distribution
- long, dependable service life

<u>Keystone</u> of Stability!

The integral center guide flange of the *Torrington* Spherical Roller Bearing provides *positive* roller guidance—the one best way to insure operating stability under radial and thrust loads.

Center guide flange surfaces and roller ends are ground to a common spherical radius. The asymmetrical roller seeks this flange under load, bearing lightly but constantly against it. Roller wobble and skewing are eliminated, and stress concentrations leading to early failure are avoided. Bearing operation is cooler, quieter and smoother.

The integral guide flange is adapted from the same principle used in the design of Torrington Tapered Roller Bearings. It is an engineering refinement, based on experience in all types of applications, that insures outstanding performance in your equipment.

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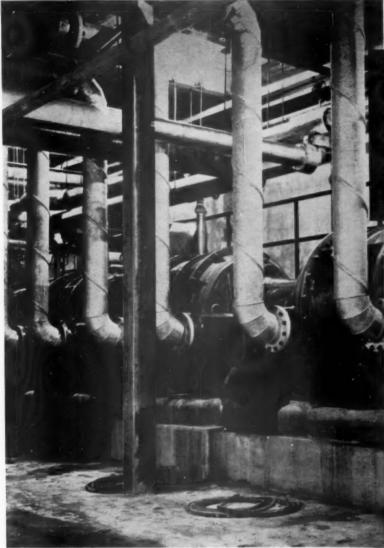
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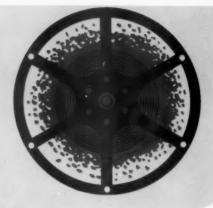
Standard fittings are available from stock.

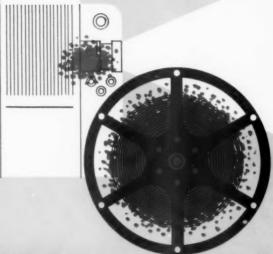
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SCENES FROM ALICEVILLE

- Portion of general administrative offices at Huyck Felt Company's Aliceville, Alabama plant.
- Batteries of modern feltmaking looms capable of weaving the widest felts in use today.
- Skilled operators joining woven fabric into endless belts.
- Burling room showing spacious, well-lighted work areas where felts are painstakingly checked before finishing.
- Several of the large instrument-controlled rotary fulling mills used to give felts proper size and body.
- Five of the automatically operated stainless steel washers employed to insure cleanliness and apply chemical treatments.
- View of the drying room where felts are dried under tension to insure proper size for installation and start-up.

PAPER'S MAGIC CARPET



The world's largest modern mill producing papermakers' felts — Aliceville, Alabama.

From Aliceville, Alabama, home of the world's largest, modern felt plant comes "Paper's Magic Carpet" — the Huyck-produced sound color motion picture on feltmaking every papermaker will want to see.

Via "Paper's Magic Carpet" you will tour incomparable feltmaking facilities and learn how new techniques and progressively-engineered equipment are combined by skilled craftsmen to produce the finest in felts. You will see in this educational film not only the entire feltmaking process, but many of the latest advancements in papermaking.

"Paper's Magic Carpet" is available for showing at your mill by your Huyck Sales and Field Service Engineers. Make your arrangements with them now.



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RECORD PAPER WEEK TURNOUT FOR APPA, SAPI and TAPPI and other association meetings, launched industry's first Paper Week of the Sixties. This special photo by P&P shows TAPPI registration line on Monday, Feb. 22.

Preparation for Growth In the Sixties

• How did the heralded "Search for the Sixties" fare at PAPER WEEK? The search was announced as official motif—did it succeed?

The industry was served notice it must fight growing competition for forest lands, it must champion "multiple use" of public lands, and must show foresight and "guts" in dealing with problems of the small woodlot owners. Otherwise, growth will be strangled.

Management faced up to the need for more realism in breaking the tightening clutch of "the profit squeeze." Volume of paper production is good, but profits and prices—no. Printing papers in good shape, but some others not so good.

Woodpulp. Sunny rays beginning to break through the clouds of over-capacity. Stability recognized as great need for years ahead. World markets beckon. Scandinavian spokesman says they want to regain losses in United States market.

Managements shows increasing interest in overseas business. But flight of investment capital, which becomes competitive to U. S. industry, was worrying some. Thirty-two multi-million dollar markets around the world were rosily pictured for American pulp and paper.

APPA's outgoing president says "friendly dealing" will make for better cooperation in the '60's among pulp and paper industries of the world, that they learned lessons in cooperating in the 50's. A former assistant secretary of state predicted the struggle between the Western and Russian way of life will go on one or two more decades and only hope for West is that moderate leaders win out in undeveloped countries,

With the food additives amendment in force as of March 6, the industry was warned it must face arbitrary actions, that Food & Drug Administration will enforce decisions across the board, and industry should make its petitions jointly instead of individually.

Materials management for the pulp and paper industry, as others, is emerging as one of the important concepts and trends of the '60's.

Problems of air and stream pollution and this industry's community relations face up to a decisive decade. Paper Week speakers foresee radical changes. Pollution, population and water supply problems will intensify government activity.

Advice from experts to U. S. and Canadian pulp producers is to be realistic about future expansion. One focal point for long range planning should be at grade level and not industry level, says one spokesman. He estimates future growth in pulp needs will stem 30% from furnish and 70% from paper production increases.

Capacity survey released at Paper Week shows industry has booked a 9% increase in paper and paperboard with more than three million more tons slated for 1960, 1961 and 1962.

American Pulpwood Association aroused interest with special session on new Noralyn process which pointed up the fact that "when we learn to use hardwoods properly we will have much better printing paper." Hardwoods and uses came in for major attention technically.

Corrosion committee chairman warns that management should pay attention to what it is costing companies to combat this grave technical problem.



NATIVE OF KENTUCKY, Dr. Richard E. McArdle is a graduate of the University of Michigan and was dean of forestry at the University of Idaho. Two of three sons are foresters. "Your decisions will be irretrievable." It is multiple use or else—he said— "because you are a minority..."

• In retrospect, there is no doubt that the climatic moment of Paper Week 1960 was when Dr. McArdle, a career government forester for 35 years, laid it squarely on the line, speaking as a "friend in court" regarding the timber supply crises facing this industry in the 1960's.

A couple hours or so before he took the rostrum in the Sert Room of the Waldorf Astoria in New York on Feb. 25, Dr. McArdle had a private conversation with a group of the top leaders of the United States pulp and paper industry. He minced no words in telling them how seriously he is concerned—he put the problems to them with even more force and sincerity (if that is possible) than he did later before the Open Industry meeting audience.

Shades of Teddy Roosevelt, Gifford Pinchot, Lyle Watts and other great conservationists, and many of them U.S. chief foresters in their day may have haunted the memories of older industry leaders who sat in that audience on the last afternoon of Paper Week. Those dedicated men of the past were not always distinguished for their fairness toward the forest industries-"timber barons" was one of their choice epithets. But at this Paper Week, the industry heard a chief forester who left no one in doubt that he was speaking urgently to them as a friend with their interests at heart. Quite a change from the "good old days!"

"Irretrievable Decisions . . . "

"I am not predicting a timber famine! I am talking about an adequate supply. It means a conscious

Warning to Pulp and

BY ALBERT W. WILSON Editor, PULP & PAPER

effort, however. The decisions you make in the '60's will be irretrievable.

At the end of this century, Dr. Mc-Ardle said, all the old growth in the United States (mostly now in the West will be gone. By the year 2,000 A.D. we must increase our growth by 50%, he declared. "And to do this, the trees must have been planted last week!"

It should be said at this point that industrial foresters in the United States have taken serious exceptions to the actual measuring sticks and the methods of appraisal used by the U.S. Forest Service. And there is no doubt that these controversies reach right up to Dr. McArdle's office in Washington, D.C. Be that as it may, he did not dwell on these mattershe devoted his speech mainly to the great forces and pressure groups and the external situations in the world which threaten to strangle the growth of the pulp and paper industry. He didn't go so far as to use that wordbut his audience knew he meant that.

He pointed out that the United States relies on 10% of its forest needs coming from Canada. "The question is," he said, "will they keep it up?" PULP & PAPER over recent years has reported the measures already taken in Ontario, Quebec, British Columbia, etc. to reduce the "flight" of their timber resources.

U.S. timber imports will increase, however, by 50%, said Dr. McArdle. He said "the Soviet Union is out of the picture." This was direct contradiction of a statement made to the writer last summer in Moscow by Vlas Nichkov, president of Exportles, who singlehanded directs all exports of Russian wood products—logs, lumber, plywood, paper. Mr. Nichkov said "we will always export pulpwood (as Russia has done for years to West European paper mills) even though we convert more, and the time will come when the U.S. will want our timber and we will ship much pulpwood across the Pacific from Siberia."

Dr. McArdle declared the United States will still have to grow most of the timber it needs in the future, and "imports offer no solution."

Then he launched into his main theme, pointing out what he called the "crucial turning points of the next ten years:" 1. Growing Competition for Lands.

Food needs for rapidly increasing populations will take vast areas out of forest growth. He cited great urban expansion, military acquisitions, dams and reservoirs, lands taken for flood control, for airports, for city watersheds for superhighways and recreation. "Every single month someone is in my office with a request."

The National Park Service is committed to expansion and putting on strong pressure for more lands.

For food crops alone, to meet the needs of 2,000 A.D., Dr. McArdle said 73 million acres will be taken out of forest use. This means 26 billion board feet a year of wood production wiped out and diverted to food crops.

For other uses, 50 million acres will be diverted from forest growing by 2,000 A.D., loss of another 12 million board feet of wood per year.

"This means that more than onethird of our timber growing capacity and more than one-fourth of our timber area will be required for other purposes," said Dr. McArdle.

"The fight for land is coming to a head. It will be decided in the 1960's."

2. What About Small Holdings?

The small woodlot holders own over half of the forest lands of United States. They are 4,500,000 people. Two-thirds of all the commercial forest land east of the Rockies is in this class. Much of it is not "productive now." Dr. McArdle said planting of trees on these lands is almost nilonly 1% of what needs to be planted is being reforested. "These small lot owners just aren't really interested in growing trees for income," he said.

"Your pulp and paper industry is doing more than anybody to aid the small lot owners,' he added.

These small owners are "the key to the future" for pulp and paper. But Dr. McArdle conceded that just "persuasion is not enough." He suggested laws might be needed. He pointed out that different philosophies clash in the handling of this problem, as Southern pulp and paper industry management knows only too well. Many want the land for other purposes.

"Not enough will be done," he said, unless the pulp and paper industry goes after this problem with "foresight and guts." These lands must contribute if pulp and paper is to grow as it must.

Paper by U.S. Chief Forester

3. What About Industrial Hold-ings?

Dr. McArdle did not dwell on this point, but did point out that industry makes the decisions here—"you have control and you are better posted." He had given credit already to the pulp and paper industry for its constructive activities.

There was no discussion of what should be done, if anything, in governing the U.S. Forest Service lands under his direction. It is generally recognized by pulp and paper leaders familiar with the situation that, in view of its vast holdings, the Forest Service is getting relatively little money from Congress for development work, access roads, etc. On the other hand, some industry leaders feel too much old, dying timber is tied up in these forest lands and more liberal cutting policies should be adopted.

4. Use of Public Lands.

Which should be national policy?

Dr. McArdle made it crystal clear that he thinks this is one of the truly crucial decisions that must be made in the 1960's

He warned his listeners that "multiple use" must win the fight, "or you are not going to get the timber you need—for you are a minority group."

The "multiple use" concept is being bitterly challenged. He deplored the "name calling" in the fight.

"Pressures have become severe in the last eight to ten years," he said. "Certain public lands must be for highways, transmission lines, reservoirs, military use—but the great bulk of lands must be multiple use."

"I caution you as a consumer of wood that multiple use is being vigorously attacked. There is an upsurge of demands for outdoor recreation lands. Earnest, dedicated people are in this battle.

"There are three dozen proposals already made that would transfer National Forests to other jurisdictions. These proposals already involve over 15 million acres," said Dr. McArdle. At this point, he discussed the demands of the National Park service to shift more National Forests (where timber may be allotted under selective cutting for use of pulp mills to the National Parks (where no trees, ancient and dying as they may be, can be touched for industrial purposes).

His remarks brought memories to many of the fight in the last Congress over the Wilderness Bill and the certainty that more bills of this kind, and other measures for removal of lands from forest production are as sure to come as taxes and death.

He wound up his address with the words in the headlines of this article—warning his hearers against underestimating these great national issues.

"You are entering a decade of decision as to our long range timber supplies," he said. "Don't let these decisions be made for you by default. Take positive action!"

New Capacity Will Be More Moderate

Seventy-seven percent of new expansion scheduled by the paper and paperboard industry between 1960 and 1962 will be in new machines, according to a joint capacity survey by the American Paper & Pulp Assn. and the National Paperboard Assn.

The idea for an official and regular joint survey began about three years ago when the quickened pace of industry expansion reached what some considered alarming proportions. An accurate survey, it was reasoned,

would keep the industry abreast of its own plans and serve as a guide for future expansions.

The new survey released during Paper Week shows that at the end of 1959 the industry had a historical capacity of 37,289,000 tons. Historical capacity means the amount of production the industry can produce operating at its normal rate of operation which is 310 days for paper and 313 days for paperboard. It is used in contrast to maximum capacity

which is the amount the industry could produce on an all-out basis.

Explains Benjamin Slatin, APPA economist, "Plans for 1962 are probably not completely established and may, therefore, deviate somewhat from the final figures. Experience shows that the rate of new capacity put in place is affected by business conditions." If business slows, capacity would be stretched out accordingly. Conversely, if there is a pick up in the economy, this could result in a speed up in the expansion rate, he says.

Over 3 Million Tons New Capacity in Paper and Board Slated for 1960 to 1962 by U.S. Mills

ITEM	TOTAL PAPER AND BOARD	PAPER						PAPERBOARD				BUILDING PAPER & BOARD AND WET MACHINE BOARD			
		TOTAL	Newsprint	Printing Papers	Fine Papers	Coarse & Special Industrial Papers	Tissue	TOTAL	Container- Board	Boxboard	Other	TOTAL	Building Papera	Building Board	Wet Machine Board
1960 New Machines Improvements Capacity End of 1960	949 461 38,699	424 159 16,245	0 12 2,458	93 77 4,793	116 28 1,940	179 29 4,830	36 13 2,224	379 282 17,952	133 E## 9,652	246 75 5,995	0 19 2,305	146 20 4,502	43 17 1,680	90 3 2,626	13 0 196
Daily Capacity End of 1960	123.29	51,46	7.01	15.46	6.26	15,58	7.15	57.35	30.84	19.15	7.36	14,48	5.42	8.42	.64
LOGI New Machines Improvements Capacity End of 1961	1,258 242 40,199	327 111 16,683	0 16 2,474	137 19 4,949	68 51 2,059	77 0 4,907	45 25 2,294	931 119 19,002	931 -20 10,563	e 98 6,093	0 41 2,346	0 12 4,514	0 0 1,680	0 12 2,638	0 0 196
Daily Capacity End of 1961	128.10	52.87	7.06	15.97	6.64	15.82	7.38	60.71	33.74	19.47	7.50	14.52	5.42	8.46	.64
F562 New Machines Imprevements Capacity End of 1962	283 84 40,566	19 51 16,753	0 29 2,503	19 11 4,979	0 10 2,069	0 -5 4,902	0 6 2,300	264 33 19,299	0 8 10,571	197 22 6,312	67 3 2,416	0 0 4,514	0 0 1,680	0 0 2,638	0 0 196
Daily Capacity End of 1962	129.25	53.07	7.14	16.06	6.67	15.80	7.40	61.66	33.77	20.17	7.72	14.52	5.42	8.46	.64

DR. OSER, president of Food & Drug Research Laboratories, Inc., New York, recommends companies make joint petitions to Food & Drug Administration . . "competition may gum up the works". . .

• "Don't panic!" The clouds and confusion surrounding the Food Additives Amendment of 1958 (which went into effect March 6) will settle down in the next six months or so."

"But there is no lower limit to what will be considered a component of food . . . the Food & Drug Administration will consider the lowest possible levels. It will never yield on this point"

"Six months from now, or a year from now, look out! We are going to have to live with this law for a long time."

"What is migration? What is involved in migration (paper chemicals to food)? Can you measure abrasion? Who is qualified to answer these questions?"

These were just a few of the comments at one of the most exciting "free-for-all" discussions ever held at a Paper Week. The place—the annual luncheon of the Sulphite Paper Man-

Additives—"Decisions will

ufacturers Assn. The time—Feb. 22 in New York's Waldorf Astoria.

Besides Dr. Oser, several top salesmen of some of the biggest and most important paper companies (who, presumably had plenty of coaching from their lawyers and technicians), and one veteran of the industry's technical battles—Tony Pesch, International Paper Co.'s technical ace in the South—took part. Others included Dr. R. C. Crain of Rhinelander and Ross Wilcox of Marathon, both technical directors.

One of Most Serious Problems

It was an exciting afternoon because here was one of the most serious problems this industry has ever faced—at least those who make paper and paperboard to package food. Last month, PULP & PAPER published a 3-page report on the issue, which pointed out, for one thing, that revisions or repeal can hardly be expected in an election year. Might just as well ask a senator or representative to repeal motherhood, as to touch any law that deals with public health in the year 1960.

As an invited guest to the Sulphite Manufacturers luncheon (that name is a misnomer for most of them also make kraft papers, now), PULP & PAPER does not feel it would be ethical to name names—except for some of Dr. Oser's prepared speech—because it was an informal, though plenty lively discussion. Chairman Earl McCourt, Consolidated Water Power & Paper Co., in closing, remarked: "we could stay here all afternoon and into the night on this subject!"

One sales manager urged members

to "wire your congressman for an extension of the law."

Food Industry Is Not Helping

During the exchange, Dr. Oser conceded that the food industry—which perhaps has the most at stake—is not helping to pay the bill which industry must meet under the new amendment. It has done very little research on additives, and has, in effect, "passed the buck." The color and dye companies are heavily hit, financially, in the requirement for research and testing, so much so that one major chemical company has threatened to withdraw from paper industry business altogether.

It was brought out that the migration tests blessed by the F & D Administration are very severe, but the Institute of Paper Chemistry, top research authority of this industry, has not accepted migration tests.

Government Seizures?

How may the F & D A enforce the amendment? Ultimately, by seizures. But Dr. Oser was of the opinion there will not be any seizures. On the other hand, the possibility was raised that the government "will pick out a few cases to win." Again, the election year attitudes hover over every move.

It was predicted the F & D A will come out soon with a statement on abrasion of dry materials. What is migration? Accidental abrasion might be considered as migration. If occasional or accidental, one speaker (an authority) said the government would not make much out of it.

It was stated that meat products can be approved on the basis of "no migration" from paper without the

Surprise for McCourt at Paper Week



EARL M. McCOURT with his "shooting iron" which was presented to him during Paper Week.

One of the happy and genuine surprises of Paper Week was when Russell Flom, Marathon sales vice president, interrupted the program of the Sulphite Paper Mfgrs. Assn. to present this "over and under" shooting iron with a .22 caliber on top and a .410 underneath to Earl M. (Mickey) McCourt, who had served for the past two years as chairman.

Mickey McCourt, who has a host of friends in this and other associations, had no idea of what was going to happen, and because of high respect and affection of the audience for him it was not just an ordinary ceremony. A. P. Mitchell is the new chairman, succeeding Mr. McCourt, whose entire paper industry has been with Consolidated Water Power & Paper Co., but Mickey will carry on as vice chairman.

Mr. Flom recalled some of Mr. Mc-Court's hunting exploits with his Wisconsin Rapids associates at their hunting club, which borders a hunting preserve in northwestern Wisconsin, and told stories of their college days together at Lawrence College in the 1920's. He said he also recalled when "Muggs (Mrs. McCourt) decided Mickey should get married."

apply across board"

. . . BERNARD L. OSER

sanction of F & D A. Dr. Oser said chemicals on the approved list will be those which have had prior sanction by the government, under these three criteria:

 Approval under the Food, Drug and Cosmetic Act.

2. Approval under the Meat Inspection Act.

Approval under a new law-the Poultry Products Acts.

Burden of Proof on Industry

Now under the F & D Amendment, the burden of proof is shifted to industry, Dr. Oser explained. "You must show it is safe. But even so, you still have to be convicted if contested. Now there is a legal squabble going on as to what industry has to do. "You have to prove that chocolate dye doesn't get into the food?"

It was stated that a big change has been going on in plans for enforcement since the middle of January. The F & D Administration realizes the problem has become bigger than was anticipated. It is now willing to take "reasonable assurance" that a color will not migrate, for example.

Cancer-Inducing Chemicals

The subject of carcinogenic chemicals came up. These are chemicals which "upon ingestion induce cancer." One speaker advised to quit now using anything suspect as a carcinogenic . . . "don't play with fire."

One veteran sales chief of a major company said: "We have been using colors for 25 years which were okay under the F & D Act of 1906. Under that act, coal tar colors are harmless. Now that color is not approved under

F & D A. Under the old law, you still had to certify colors. So what do we do?"

If transfers to food from paper are visible to the naked eye, then it will be handled by the F & D Administration. It was stated that if it is demonstrated that a transfer of color is insignificant, it may pass. Under the law of 1938, the burden of proof was on the government, but now it is changed.

A warning by one speaker: Look out for colors with milk and ice cream containers because of the danger of water extraction. It was suggested that it would be "smart" to stop using mercury slimicides. Is grease or moisture a serious problem? Most colors are oil insoluble, it was said.

are oil insoluble, it was said.

One speaker held that the industry has accumulated a great deal of information on the problem in the past year and "most of us know what to use."

Arbitrary Choice of Experts

Dr. Oser, who is 61, with degrees up to doctorate of chemistry from Pennsylvania and Fordham, and who has devoted many years to study of food additives safety and technical aspects of related laws, started off his talk by pointing out the F & D Administration is making arbitrary decisions as to who are experts on the subject of food additives. And what is pure. Some 800 or 900 people are regarded as experts. Hundreds of questions on the subject of what is safe and toxicology of substances have been answered, but "generally you will get a negative answer." He said some companies have claimed they are getting conflicting answers.

He discussed the reluctance of manufacturers of color and chemicals to reveal information. One result of the amendment is to force disclosures. A petition must be filed for use of a chemical or color. So far as new additives are concerned, he said, there will be "a lot of disclosures."

Urges Joint Petitions

"If it is safe, somebody must get the information," he said. "Does it become a component of food? You don't have as many secrets as you believe you have. Decisions will apply across the board. To avoid a competitor from 'gumming up the works,' it is better for companies to make joint petitions."

He noted that industry has figured there are 1,300 chemicals in food flavors "but this is not all."

He conceded that industry "does not yet know where it stands" and that many companies did not realize they were going to be involved—"they are just waking up to the fact."

During January there were 600 applications for extensions. There have been many more since. Others are just "waiting to see what happens." Extensions can be granted, he said. The F & D Administration is swamped with applications and is able only to reply that the request has been received.

"There will be no legal action without prior notice," said Dr. Oser. "This problem has made for a lot of activity by lawyers—God bless them. Efforts to get on the 'White List' will continue." (On page 96, March 1960 issue of PULP & PAPER appears a list of the first 96 recognized "safe" chemicals).—A.W.W.

Sulphite Association Elects Officers



To the second



Mitchell

Gould

Leach

Following is a list of the new officers for the forthcoming year.

Members of the Sulphite Paper Manufacturers Assn., Inc., elected Aaron P. Mitchell, chairman, and Leslie W. Gould, vice chairman, at their 28th annual meeting at the Waldorf Astoria on Feb. 22. Mr. Mitchell is senior vice pres.-director of marketing, Riegel Paper Corp. He has been with Riegel 37 years, all of it in the New York office. Mr. Gould is asst. vice pres.-eastern division mgr., Crown Zellerbach Corp. He was formerly a vice pres. with Gaylord Container.

Elected governors were J. R. Cryan, Fraser Paper; R. C. Flom, Marathon, Division of American Can; E. W. McCourt, Consolidated Water Power & Paper; R. A. Nash, Sorg Paper; W. C. Shorter, Union Bag-Camp; D. L. Stocker, KVP-Sutherland; H. W. Suter, Jr., Champion Paper & Fibre; G. E. Veneman, Nekoosa Edwards, and H. B. Vergara, International. Neil E. Nash and Alfred Southon were elected honorary life members of the board. Charles H. Leach was reappointed secretary-treasurer.

OFFICERS of Sulphite Assn.



ERIC G. LAGERLOEF, secretary of APPA's Export Committee since its formation in 1946, has brought his considerable experience in the U.S. Dept. of Commerce to prepare a trade reports on overseas countries. He said tariffs may be lowered against U.S.A. paper . . .

"32 multi-million \$ paper-

By MAURICE R. CASTAGNE Eastern Editor, PULP & PAPER

 World trade in pulp, paper, paperboard and paper products have bettered the \$3 billion mark. The U.S.A. industry's share is \$291.9 million and judging from recent interest and activity on the part of the industry, it expects to increase its share.

The U.S. industry exports to some 90 countries and 32 of these are in the million dollar a year market class. Although growing interest has been shown toward the European Common Market, at present the Western Hemisphere is still the U.S. industry's prime market area. These are some of the high points disclosed in a report on "Million Dollar Pulp & Paper Markets for U.S." prepared by Eric G. Lagerloef, secretary of the American Paper & Pulp Assn's. Export Committee.

Total U. S. Exports

The total value of U.S. exports of pulp and paper to Western Hemisphere countries in 1958 were \$166,-

656,000, reports Mr. Lagerloef. Paper and paperboard provided most of the exports, although woodpulp remains in substantial demand.

Eight of the multi-million dollar markets are located in Western Europe where two strong trade blocs have now come into being. "Should a common meeting ground be found whereby the two trade groups would apply their respective tariff cutting programs to include nations of both groups, then it would seem likely that our markets in these two countries could be seriously affected," he said.

Hope for Lowered Tariffs

Recent high level talks between Canada, U.S. and the 18 O.E.E.C. countries may lead, says Mr. Lager-loef, to substantial changes in the possible erection of trade barriers against North American imports. The proposed formation of an Atlantic Trade Group, he believes, would place the U.S. in a more favorable position marketwise to profit from West Europe's expanding economy.

Least promising market area is the



EUGENE COONEY, manager, Import Committee of the American Paper Industry, studied the European Common Market since it was conceived . . .

• The whole world is following the European Common Market, Mr. Cooney told the Paper Week meeting of the APPA's Export Committee. "Sooner or later," he says, "the Common Market must have practical application to anyone who is thinking of exporting."

"Euromart changes astounding"... EUGENE COONEY

The Common Market today, he says, has grown and matured faster than he had conceived possible and is now on the threshold of the second phase of development. Alluding to those who compare the population of the Common Market (165 million) with that of the U.S.A. (179 million), Mr. Cooney said, "The true Common Market, through its associated overseas countries and territories, which are part and parcel of the scheme, has a population topping 220 million and a land mass exceeding 5 million square miles.

No Mere Customs Union

Another important point stressed by the manager of the Import Committee of the American Paper Industry: "The Common Market is no mere customs union. It is much, much more. It looks further to:

 Establishment of a commercial policy for states outside the Community;

Abolition of obstacles to the free movement of persons, services and capital;

3. Inauguration of common agricul-

tural and transport policies;

A system insuring competition;
 Procedures to coordinate domestic policies and remedying balance-of-payments disequilibria;

 Removal of differences in national laws necessary for operation of the Market;

7. A European social fund to educate and train displaced workers and raise their standard of living;

8. A European investment bank to facilitate economic expansion.

True Federation

These objectives are actually in the Rome Treaty. The real goal is to see a true federation of national entities into one united entity, stressed Mr. Cooney. They intend to emulate these United States of America.

"Their first planned phase," he ex-

"Their first planned phase," he explained, "was very naturally the customs union. Their second phase and present position involves harmonization and complete integration of fiscal and social policies."

The third and ultimate phase, explained Mr. Cooney, means political unity—a unified federal government.

pulp markets for U.S.A."

. . ERIC G. LAGERLOEF

Far East, says Mr. Lagerloef, "because of the low consumption potential of India, the substantial increase in domestic production facilities in the Philippines and the increasing exports of Japan and Red China."

At APPA's export meetng, James M. Owens, director of the Forest Products Div., B.D.S.A., U.S. Dept. of Commerce, stated from the floor that both Canada and the U.S. have a tremendous opportunity to increase

exports of paper products to Europe. While other industries may be curtailing exports, he said, the paper industry is an exception because the U.S. and Canada have the raw materials and the management knowhow.

Special Conferences Coming Up In D.C., PULP & PAPER Learns

Mr. Owens explained to PULP & PAPER that the Bureau of Foreign Commerce and the Business and Defense Services Administration of the U.S. Dept. of Commerce will hold special conferences in Washington, D.C. with industry representatives on export trade promotion.

Primary items on the agenda are:

A. Tariffs—The U. S. will participate in a major tariff negotiating conference under the General Agreement on Tariffs and Trade (GATT) in Geneva, Switzerland, in late 1960 and continuing well into 1961. Advice is needed from pulp and paper industry as to specific tariff reductions which U. S. negotiators would request of individual countries to increase exports of U. S. products.

B. Quantitative Restrictions— Dramatic progress has been made recently through the GATT and other international forums, in obtaining relaxation or elimina-

tion of quota and licensing restrictions which foreign countries impose on U. S. imports. Advice is needed from pulp and paper industry as to the remaining restrictions that block exports of U. S. products, so that efforts can be directed toward modification or elimination.

C. Other Trade Barriers—Pulp and paper industry is asked: What other foreign government controls or regulations are restricting the sale of U. S. products abroad?

The Department of Commerce is accelerating efforts to develop more effective measures to serve business in increasing U. S. exports. Among the important items to which attention is being given is the matter of overseas trade centers for display of U. S. Goods, possible need for expanded export credit facilities, and more thorough knowledge of opportunities for U. S. exports. Pulp and paper firms are asked for advice on these topics as well as any other suggestions to strengthen the U. S. position in world trade.

Businessman and Diplomat Look Ahead

A spokesman for the American paper industry and a former assistant secretary of state of the U.S. Government each had their chance to say in what direction world affairs are headed at the 12th annual luncheon of the Association of Pulp Consumers, held on Feb. 24 during the American industry's Paper Week in New York.

John R. Kimberly, retiring president of the American Paper & Pulp Assn., spoke only briefly, but what he had to say was at least partly based on experience of a company, his own Kimberly-Clark Corp., which today is operating mills and plants in eight countries on four continents.

"The pulp and paper industry will do a better job in the 1960's in dealing in a friendly and constructive way with all the countries (which participate) in our industry, as a result of our experiences in the 1950's."

In a very brief talk, he also said this industry "is becoming more international minded" and particularly in the handling of the "problems of pulp production and consumption."

But this was enough to indicate his conviction that businessmen may be expected to contribute to peaceful solutions of some of the world's problems as their international interests

become more extensive.

The principal speaker at the luncheon, Robert Bowie, director of Harvard University's Center for International Affairs and former assistant secretary of state under the late Foster Dulles, predicted, on the other hand, that "the great struggle between two ways of life in the world will go on indefinitely—at least for one or two more decades."

The decision between these two ways, he said, will "rest on whether moderate leaders take over leadership in the less developed countries."

Speaking to an audience which not only included executives of the pulp consuming companies of America, but also their traditional guests at this luncheon—representatives of world market woodpulp producers of the U.S., Canada and Scandinavia—Prof. Bowie spoke from experience as an international diplomat and diplomatic advisor to army leaders in Washington and Europe.

He said there was a "long hard road ahead to any kind of armament agreement," and attempts to "interrupt the march of Communism is regarded as aggression by its adherents, because they consider it the way of the future."

But still, he said, "evolution is going on in the Soviet Union, too, and in time—maybe in decades—we have reason to hope that its fanaticism may be eroded internally, and exchanges of people are one way to bring this about."

He said "500 million people in the U.S. and western Europe cannot hope to be able to oppose 2% billion people of the world if they come under control of the Kremlin." To prevent this happening he urged technical assistance to underdeveloped countries, people exchanges, private investment and large public investments abroad, "well above what we are now doing or even contemplating."

Both Russia and America recognize that allout war would be a catastrophe, said Prof. Bowie, but "the case of Hungary shows force will be used when no such risks are taken.

The West, he said, has "a gross national product of % of a trillion dollars a year and can easily afford only 1% contribution of this to aid undeveloped nations. To suggest that this is expensive," he added, "is the grimmest kind of joking."

U.S. Pulp Producers and Consumers Spokesmen Say Scandinavians Can Reach New Production Goals

• With increased demand, increased production and some price firmness, a certain degree of stability has settled upon the pulp world. As it continues, and it is expected to for at least the balance of 1960, the pulp industry has that expansion gleam in its eye again. But this gleam is backed by some solid clear vision and the next expansion wave is expected to be backed by a much greater degree of realism.

This sense of realism, the importance of guessing right and a consideration not so much of the industry level as of grade level will be most needed accourtements for the industry in weighing any future expansion. The U.S.A. pulp industry in particular must be realistic about its position home and abroad, say its leaders. There definitely is overcapacity and there would have been much more if the U.S. and Canadian industry had not done some soul searching and deferred an estimated 5,000,000 tons.

The U.S. industry must be realistic about the fact that its share of world market pulp sales, notably in Europe, is shrinking. Its first counter-thrust may be to hasten the integration trend at home. Several years ago when U.S. market pulp sales were booming in Europe, some U.S. producers assured their European customers they were in Europe to stay. But sharp on the heels of this statement come oversupply, sharp competition and lower prices in Europe. Despite growing world pulp sales, the U.S. share has slumped from 25.5% in 1956, 24.7% in 1957, 22.1% in 1958 to 20.9% in 1959. In the same interval Scandinavia has upped its portion from 51.7% to 56.8%.

Some North American producers, notably U.S. producers, warn that if they can't do business in Europe, they will be forced to withdraw from the market and integrate at home. Many European market pulp consumers have said Europe needs both North American and Scandinavian sources of pulp.

There has been relatively little growth in U.S. market pulp consumption in the past 10 years, although 1959 did show an increase of 7.8% over 1958.

A key to future growth of pulp in the Sixties is the European Common Market. Upon its future development hinges the fate of Scandinavian and North American pulp producers. The growth is there, but how much and who will get what are the big questions.

The U.S. Dept. of Commerce's Foreign Trade Division states it will do everything in its power to improve the U.S. pulp industry's position in the Common Market and to try to remove if possible unfavorable trade restrictions. For its part, Scandinavia has always been dominant in Europe and can be expected to do everything to hold its leadership.

Scandinavia's Big Expansion

There has been some skepticism voiced in North America whether Scandinavia can actually come through with the backing it needs; capital and raw material. James L. Ritchie, executive director of the U.S. Pulp Producers Assn., Inc., asks: "Where will Scandinavia find the wood to support an expansion of this (5.7 million tons) magnitude (by 1965)? But he concludes "it must be assumed they can do it."

"In the first eight years following World War II, woodpulp production in Scandinavia never reached pre-war production levels; the reason assigned



DR. FREDERICK FROST is vice president, research, for S. D. Warren Co. and is considered a dean among coating experts. His company has pioneered many coating developments including air knife coater.

• A new approach to the problem of imparting a high finish to coated papers was introduced by Dr. Frost, who is vice president, research, S. D. Warren Co., at the TAPPI convention in New York during Paper Week in late February.

"New low cost, gentle

The concept is simple. Coated paper is pressed with low pressure against a hot, highly polished surface. Finish is obtained by heat and pressure flowing a coating, high in mineral content, against the polished roll.

"All of us," explained Dr. Frost, who is considered one of the foremost authorities on coating today," have dreamed of a day when a low cost, gentle, finishing method might be developed which would supersede calendering. Cast coating does this, but this is, comparatively speaking, an expensive procedure."

The chromium plated roll is about 48-in. dia., and internally heated. The backing or pressure roll or rolls are rubber covered and form a nip with the metal roll of appreciable width.

Pressures are low, may be as low as one-fiftieth of normal calendering pressures. The polished roll is hot, often decidedly above the boiling point of water. Such temperatures are above normal calendering tempera-

tures.

"When the coating first touches the hot polished surface at a point on the dryer, the coating may explode at this point," conjectured Dr. Frost. "To overcome this we must use a coating which through partial drying or through chemical means will form a gel structure sufficiently strong to resist this shattering effect on contact with the hot roll.

"We visualize that the water in the coating becomes superheated and is driven into the body stock, which may be half voids. Pressure per square inch of the backing roll, against the chrome roll should be maintained at a higher pressure than the steam pressure corresponding to the roll temperatures.

"As the coated sheet emerges from the nip the superheated water turns to steam and this steam explodes or flashes out the back side.

"We tend to be somewhat careless in our thinking in regard to moisture was depleted wood resources. Now, suddenly, wood is available to support a major expansion program. The explanation is that all forest surveys prior to 1954 were based on a saw timber cycle. In the 1954 Forest Surveys, and all subsequent surveys, forest measurements have been based on a pulpwood cycle, to the extent that pulpwood utilization has been contemplated.

"It must be assumed therefore, that forest resources in Scandinavia will be adequate to suport the planned increase in pulp and paper supply. While Scandinavian producers may gamble on markets, it hardly seems likely that they would gamble on the adequacy of prospective wood supply.

Financial Question in Scandinavia

"The second question commonly asked relates to the ability of Scandinavia to find the capital to finance her expansion program," said Mr. Ritchie. "An article by the President of Handelsbank, more than a year ago, outlined reasons why capital might not be available for large scale expansion of pulp and paper facilities. Now, lack of capital appears no problem, despite the fact that retained earnings, identified as the principal source of capital in the first postwar decade, have been adversely affected by price cuts. There has been no change.

"We can think of no answer, except perhaps that as a matter of national pride, when Finland places it bets, capital funds must be found to permit Sweden to raise the ante."

Scandinavian Record Impresses

In his annual report to his members, Reed R. Porter, executive secretary of the Assn. of Pulp Consumers, Inc., says, "There is factual support to previous statements by Swedish and Finnish producers that they have the wood, the ability and the intention to reclaim their former position in world pulp markets. Prior to last year, the Scandinavian claims were taken with a grain of salt; 1959 demonstrated by deeds their ability to live up to these contentions. I consider the Scandinavian performance to be outstanding development in world pulp markets in 1959.

"The Swedish quantity record in 1959 was most impressive; perhaps the outstanding feature of the world pulp market in 1959. But Sweden's receipts on her exports of chemical pulp in 1959 averaged about 90 kroner per ton less than in 1957. Translated into dollars, this means the 1959 pulp sold for about \$18/ton less than the 1957 output. This made for tight competition; so much so, that several of the North American suppliers dropped out of the European market."

Basis For Pulp Expansion

In assessing the future, Mr. Ritchie advises that the measure of oversupply from miscalculation is great and that it is most important to guess. right. The focal point, he explains, in long range planning is grade level, not industry level. He advises a careful and minute study of grade performance and explains that pattern changes rather than increases in population per se may affect each segment of the industry differently.

In reckoning any launching of pulp expansion, two factors to be considered, stressed Mr. Ritchie, are domestic paper demand based upon rate of growth of population and of per capita consumption. He estimates that 30% of future growth of woodpulp requirements will stem from furnish and 70% will be due to paper and paperboard production increases.

Scandinavian Forecast Woodpulp Up 5 Million Tons

The Scandinavian nations will increase their total woodpulp production by 5,000,000 tons within five

This important forecast was made during the Paper Week annual events of the American pulp and paper industry in New York in February by Per Westad, president of the American Woodpulp Importers Association. He represents Borregaard Co., Inc.

finish coating"... DR. FREDERICK FROST

content. Normally we call paper "dry" when it contains 5% moisture which is 100 lbs. water per ton of paper. At 5% moisture this process will work whereas at 1% we have had no success in obtaining a satisfactory, let alone an outstanding finish and surface.

S. D. Warren visualizes that moisture acts as a plasticizer and that the sudden increase in temperature provides a momentary mobility to the coating which allows it to conform but not adhere to the polished roll surface. The process can also operate in the presence of a very high moisture content—10% to 15%—and if the coating has been rendered less mobile by, for example, the hardening action produced by the sudden release of alminum ions in the coating, such levels may be required to give the desired finish and gloss.

Dr. Frost says it is possible to hold coagulants in the coating in certain complexes and release them by running the coating against a roll cov-

ered, for example, with a thin film of acid. This can give virtually an instantaneous change from a liquid to a solid coating. Dr. Frost calls it chemical freezing and says it is one method of rendering the coating non-explodable as it enters the nip.

What's more, the surface of the coated side which is to be pressed against the polished roll may be moistened prior to entering the nip. A slide showed water actually boiling on the coated surface and Dr. Frost said that this can happen on coatings which contain either very small or excessive amounts of water if they have been sufficiently jelled to withstand such action.

"Boiling water on a coated surface may sound," said Dr. Frost, "like an old wives' tale. However, if you will consider that we are not discussing a static process but one in which paper is running at speed, and that coating is subjected to this boiling action for a small fraction of a second, you will appreciate that this is a sensible and practical idea."

The new process is covered by U.S. Patent 2,919,205 and other applications are pending. "We hope," stressed Dr. Frost, "that as this development progresses it may prove to be the long awaited means of escaping from the dominating and destructive influence of calendering on coated paper."

Comment: S. D. Warren has in the opinion of many coating experts come up with a remarkable, high quality coated sheet. Usually the company is reticent to discuss its coating operations but it broke with tradition at this meeting. It did so to let the industry know in a gentle and polite manner that certain fields that were being explored by some companies and machinery builders were already covered by S. D. Warren patents. Dr. Frost was backed up in the question and answer session by Dr. Joseph Thomas, associate research director. The meeting was one of the best attended.—M.R.C.



MR. ADAMS, Champion Paper & Fibre, adds: "Materials management department needs to be centralized, strong."

• Materials management is still a step-child of management. That is, control of material flow from supply sources to production line and from production and storage to common carrier is "still not unified organizationally."

That was the overall consensus of APPA's Materials Committee meeting in one of 1960 Paper Week's important sessions in New York. Donald S. Adams had this to say: "If there is going to be anything in the concept in the next 10 to 20 years, it's going to be change. . . . I do not think that any company can afford to overlook any phase of the total materials management problem if it is to compete successfully in today's market." Mr. Adams is materials dept. mgr. at the Ohio div. of Champion Paper & Fibre Co.

Looking toward the hoped-for breakthroughs of the coming decade, Mr. Adams told a packed committee meeting that, "the materials management concept will be the big thing in the 60s, as materials handling was in the 50s." He called for strong centralized materials management in the well-operated pulp and paper company; the man to head it "must be able to organize a fairly good sized department and keep it running."

With a background of materials handling in steel as well as paper, Mr. Adams stressed that the man heading any materials management function "must be open-minded—this is one of the biggest assets he can have.

Electronic Data Processing

"Many of these will involve electronic data processing, linear programming, etc. The materials manager has to embrace these ideas and be willing and able to use staff personnel to forward these concepts."

"Materials management

By DON W. ZEIGLER Midwest Editor, PULP & PAPER

The speaker discussed the problem of (1) what should be included in materials management, and (2) who should be placed in charge of the function. "Many people claim," he said, "that a sound material management program must start with scheduling of the production operation. . . . However, I think that the day may come when we will see scheduling as a materials management function even in the paper industry." At least, he added, there is a definite need in the paper industry for closer communications and co-ordination between scheduling and inventory control on purchasing of raw materials. "The problem of inventory control is logically a function of the materials management department. . . . Logically, then, purchasing -as the next step of inventory con-trol-falls under the materials management function.

Jockeying for Supremacy

Adding strength to the overall theme of the meeting was Paul V. Farrell, editor of Purchasing Magazine, who declared, "few purchasing directors can be called materials managers. . . In the typical big corporation at least two departments—production control and purchasing—are constantly jockeying for supremacy as top dogs in materials management." Usually, he added, neither ever gains absolute supremacy. And as a result there is rarely perfect coordination and achievement of interrelated materials objectives.

"... Basic conflicts of this type are usually resolved by the sort of compromise that is more political than economic. As a result in too many cases no one is really managing materials. Instead, specialists—working independently and often at cross purposes—are writing requisitions, negotiating prices and issuing orders, expediting, receiving materials, etc."

Logically Planned, Operated

Returning to the what-goes-where problem, Champion's Mr. Adams—assuming that the materials handling functions of raw materials receiving and warehousing are natural materials management operations—said that also belonging in this overall picture is the handling of in-process paper (usually roll storage). Continuing, "the handling, warehousing and ship-

ping of finished goods can very readily be accepted as part of the materials function, as can operation of the traffic department.

"... Control of inventory is better handled by someone other than the personnel actually involved in the use of the materials. This is especially true of raw material supplies, where inventory control by operating personnel tends to over-supply,"

Happy agreement must be reached in any company, said Mr. Adams, as to who will head such vital operations. Purchasing publications feel that the purchasing agent is the man; a recent issue of Dunn's Review pointed out that the traffic manager is the logical choice; Modern Material Handling votes for the material handling engineer.

Mr. Adams refused to take sides. "Obviously," he said, "the man to fill this position is the man in your organization who is best qualified on the basis of background and potential"."

False Premise: Poor Operation

"The fact is," said Editor Farrell, "there is no need for a separate, independent materials function IF one simple premise is accepted: that skill in managing materials automatically accompanies skill in specifying and using materials.

"But, modern progressive managements know this is a false concept. They now accept another premise: that materials management is a basic, organic function of business—every bit as important as sales, engineering, manufacturing and finance."

Although the strong purchasing department is common to most firms, he said, only a handful has a completely integrated materials management activity. Materials management remains one of the least understood and least recognized major functions of business. It is "just as essential to the small shop with a dozen employes as it is to the corporation with a half-million workers."

MM and Distribution

Calling preventive maintenance and equipment replacement vital cogs in the materials management machine, Mr. Adams pointed up the big picture of distribution in the overall materials management view and the place of the transportation industry in its efficient operation. Solutions to some of the complicated distribution problems are now be-

will be big in '60's"

. . DONALD S. ADAMS

coming available, he said, adding that the most important of these is probably the electrical data processing equipment that allows a more accurate control over inventory.

Transportation industry is going to be a big factor in progress. "Many technological changes are coming about in our transportation services," he said. Probably the three most important factors are (1) improved equipment for damage reduction, (2) containerization and (3) higherspeed transport.

The speaker looked into what might be the immediate future to see more widespread use of (1) spring-loaded couplers for railroad cars; (2) inflatable dunnage; (3) inflatable bulk-heads; (4) damage-free equipment; (5) improved rail facilities; (6) roller bearing cars; (7) piggy-back principles, and (8) airlines for carrying freight.

"We must not overlook any phase of this problem at the expense of others," Mr. Adams concluded. "Certainly, the material handling aspects of the total materials management problem is one that will continue to require effort, ingenuity and concentrated attention."

Sounds Note of Caution

An economic go-slow policy was suggested by J. Roger Wallace, associate editor (commodity economics) for The Journal of Commerce.

There was a time, he said, late in 1959 and early in 1960 when every forecaster "seemed to be trying to outdo all his predecessors in the annual forecasting derby... The trees began to reach to the sky. The Golden Sixties, we were assured, were off to a beautiful start."

Midst that exuberance, Mr. Wallace ventured a cautionary note. At that time he pointed to several serious soft spots: (1) home building; (2) indications that the consumer instalment credit cycle appeared nearing its peak; (3) the comparatively low level of backlog orders for durable goods.

Since that time, the speaker pointed out, something has stuck at least a small pin in the bubble. The stock market has suffered a dose of deflation. The great shortage of steel seems to have been met after only a short period of high-level production; prices of steel in the secondary market have begun to crack. This in a period when we had been told that capacity steel production would ex-

tend into the third quarter to meet strike-caused shortages.

Learning by Experience

The recent experience with steel has furnished a good lesson.

"First, it teaches us once again how quickly a supposed shortage of material can turn very quickly into an ample supply. Second, it proves once more that you cannot believe all that you hear."

Another lesson: Automobile manufacturers forecast new car sales during 1960 at between 7,000,000 and 7,250,000, second only to 1955. Already they have begun to pull in their horns. Consumers have taken well to the new compact cars but seem to be scorning the older lines. "If my memory is correct," Mr. Wallace asserted, "official industry 'forecasts' of annual sales have proved to be far out of line much more often than they have turned out to be approximately correct."

This bubble-shrinking has had its effect. "Inevitably," the speaker warned, "the rather abrupt change in the economic climate during recent weeks has exerted an impact on prices of primary materials. Purchasing agents for industry, uncertain as to just what was going on around them, have turned cautious. The paper industry has felt this to a certain extent." Nevertheless, he added, prices of primary materials have held up quite well; and here and there some signs of strength have recently developed.

"New orders for paperboard, adjusted to seasonal variation, tend to lead general business activity by a

few months and have drifted gradually downward since last summer. However, the trend in paperboard orders has been deceptive at times."

"In analyzing the outlook for materials prices," Mr. Wallace declared, "we must allow for the possibility of a moderate amount of easing during the next six months or so from current very high levels of business activity here in the United States. But, even at the end of six months business in all probability still would be at high levels.

"However, probable level of demand in the United States is only part of the picture. Industrialization has made great forward strides abroad in recent years, even in the more backward countries."

Business Abroad Booming

Abroad, he continued, there is no indication of any early leveling off of the current boom. The world as a whole is chewing up materials at a record high pace, and that pace could continue upward even in the event of some slackening in demand in the United States.

Material supplies are generally adequate. . . . There are few surpluses. . . . Productive capacity has been increased considerably during the postwar period, but prices have to be sufficiently remunerative to induce marginal operations.

Concluding: "Inflation long prolonged tends to breed deflation. We must be ever alert to the possibility that the trend of the price level may not continue to be a one-way street indefinitely."

Output and Sales at All-Time High

By a whopping 8% the paper industry in 1959 bested its previous all-time production peak. Output of 34,000,000 tons was 3,300,000 above 1958 and 2,600,000 over the former high established in 1956.

Sales of paper and paper products also set the pace for the Soaring 60s, as the coming decade was often called during Paper Week. Total for 1959 was \$12.1 billion, a gain of 11% over the \$10.9 billion of 1958 and of 17% over the \$10.3 billion of 1956.

These facts and figures were reported at APPA headquarters in the Waldorf-Astoria by Robert E. O'Connor, executive secretary.

Last year's profits after taxes, he said, were about 5.2% of sales. This brought profit above 1957-58.

Other 1959 statistics revealed in Mr. O'Connor's report included: (1) Capital expenditures for new plant and equipment totaled \$625,000,000, an 8% increase. (2) Employment in paper and allied products was 560,000, a gain of 2.4%. (3) Woodpulp output stood at more than 24,000,000 tons, up 11%. (4) Woodpulp imports at 2,400,000 tons were up 17%, while exports at 600,000 tons registered à 22% increase.

"We feel we have a real contribution to make to the industry . . ." JACK AINSWORTH, v.p. of Noralyn.



"We're not promoters . . . the word has a nasty connotation to me . . ." LEO STACK, pres., Noralyn Paper Mills, Inc.



"This is an exciting venture, one we're happy to be part of . . ." WILLIAM WEBSTER, of H. K. Ferguson Co.

"Newsprint a superior

By WILLIAM F. DIEHL, Jr. Southern Editor, PULP & PAPER

 One of the most widely discussed meetings of Paper Week was the American Pulpwood Association's opening session, devoted to talks on international significance of the Noralyn process.

Noralyn Paper Mills Inc. is presently financing a mill which will produce newsprint from 100% hardwoods, using a process developed at the Herty Foundation in Savannah, Ga. The mill will be designed and built by H. K. Ferguson Co. and will be located in West Baton Rouge, La.

APA extended an invitation to Noralyn to discuss the significance of its process after seeing a sample sheet of its newsprint. The fact that such a process might open the way for really sweeping use of hardwoods in the South and elsewhere made it a good topic for APA study. It was clearly understood that the process itself would NOT be discussed. Neverthe-

less, many people who composed the standing-room-only audience read between the lines and apparently came to learn some of Noralyn's secrets.

Circulating through the audience following the meeting, PULP & PAPER editors talked with many people who felt the misunderstanding was unfortunate. Some felt Noralyn used the meeting as a promotion scheme and others frankly declared they believed Noralyn's claims were exaggerated.

PULP & PAPER arranged an exclusive interview with Leo Stack, president of Noralyn, Jack Ainsworth, Noralyn vice pres., and William T. Webster, consulting engineer for H. K. Ferguson, who will direct design and construction of the mill, and asked these questions point-blank. The story which follows describes the discussion which led to that exclusive interview and the questions asked as well as Noralyn's answers. It is hoped that any misunderstandings have thus been cleared away.

The Editors

The Meeting

• Most of the comment concerning the Noralyn presentation was generated during a question-and-answer period following a panel composed of Noralyn's Ainsworth, Herty's Belvin, P. R. Wheeler of the Southern Forest Experiment Station and J. R. Owens, director of the BDSA's Forest Products div. Mr. Ainsworth described the beginning of research on this product in 1958 with three species of wood. Within six months, Herty and Noralyn were working with seven species and eventually used 11 species.

In an effort to produce a sheet of "practical" newsprint, 10,000 lbs. of pulp were shipped in refrigerated cars to Combined Locks Paper Co. in Wisconsin, where eight full size rolls were produced. This sheet was then run at 46,000 copies an hour on the Milwaukee Journal press, where it performed without a break. Same newsprint was later run at 38,000 copies an hour on the New York Times press and at 42,000 copies per hour on the Savannah Morning News

presses. Its most rigorous test: A 68-ft. lead into a 42,000 copy per hour press with four right angle turns, where it made a full run without breaking.

Claimed Mr. Ainsworth: "We feel we have a most successful product which in most cases is superior to any newsprint on the American market and is entirely competitive to any in U.S. or Canada."

Following Mr. Ainsworth, William Belvin, director of the Herty Foundation, commented: "I can unqualifiedly say it is equal to any newsprint I have ever seen. It is a major breakthrough

Following them, Mr. Wheeler and Mr. Owens commented briefly on the importance of hardwoods and their utilization in the coming years. Later, under questioning, Mr. Ainsworth went farther in his claims about Noralyn's pulp. The yield, he said, is higher than groundwood or normal newsprint. Economics, too, are better.

The pulp, he went on, yields higher than standard kraft or sulfite under bleaching. The Combined Locks supt., he said, believes it will

product"

Noralyn executives in exclusive PULP & PAPER interview

run on the fastest machine in the country. Some very hard hardwoods, like oak, will be used to provide best finish possible, and sawmill waste will also be utilized. Finally, he said that there are broader aspects to this process than newsprint. "We will continue to use Herty as a research source and so it is quite plain we plan to investigate further."

In summing up, George B. Amidon of Minnesota & Ontario Co. president of the American Pulpwood Assn., commented: "This is a most significant development in our industry. We'll jump from 34 to 50 million tons a year by 1970. New uses for hardwoods are needed, despite progress in growth of softwoods. Obviously, we'll have to use more

hardwoods."

Experts in the audience, however, were skeptical of Noralyn's claims that its pulp can run on the fastest machine in the world ("How do they know?"), and that the economics of its use are attractive ("They aren't in production yet."). Questions were also aimed at the tests. These are the questions PULP & PAPER asked.

The Interview

It has been suggested that this meeting was arranged by Noralyn.

A. We were invited by the APA to appear at this meeting and to describe our thoughts as far as international aspects of the process went. We did not ask nor arrange to be asked to attend the meeting.

Q. Some people questioned the fact that you went to Combined Locks rather than a newsprint mill.

A. Mr. Stack asked me (Ainsworth) to find a paper machine so that we could make a sufficient amount of paper to make a commercial run. Naturally, we couldn't go to a newsprint mill, we have certain secrets to maintain. Also, the amount of pulp we had would have run through a high-speed machine in just a couple of minutes. It just wasn't practical.

Q. It has been suggested that loading or some filler was added to the pulp in order to get the smoother, brighter sheet of newsprint on this experimental run.

A. Nothing was added to the sheet. We used our standard hardwood furnish within 0.1% of the anticipated commercial furnish.

Q. Some equipment people have commented that pulps react differently under different speeds; that your sheet was probably produced at a very slow machine speed but that at high speeds its quality might be quite different.

A. When this run was made there were people present from Noralyn, Combined Locks, Herty, Black-Clawson, Allied Chemical & Dye and other companies. Herty assures us that the individual pulps in the furnish were tested and proved to be adequate to high speed runs. Wet strength was higher than anticipated. There was a 17-ft. drop from the couch to the press, which is a pretty good test of sheet strength. Black-Clawson's technical staff ran drainage

and other tests and observed the pulp in action. They are going to build a machine which will operate at 2,000 fpm or thereabouts. We are as sure it will run well at high speeds as we can scientifically be. One other thing, we took chances at Combined Locks we didn't have to take. For one thing the Combined Locks machine has a short wire, and a long wire is necessary for good Noralyn furnish.

Q. It has been suggested that this is a modification of existing processes and nothing revolutionary. Would you consider it revolutionary?

A. There is nothing new about the way paper is made now compared to 3,000 years ago. All we've done is modify the process. Our furnish is bleached semichem and groundwood. We are using standard equipment. But we are using the equipment and blending the furnish in a unique way. It's entirely new; and if being new is revolutionary, then we're just that. We're using orthodox equipment in an unorthodox way.

Q. The question was raised that you are using only two or three species of hardwoods and barely feeding in the others. If so, it has been claimed the process has a limited application.

A. The trouble is that a large percentage of paper companies don't have anyone who knows wood. You must learn how to bond fibers and homogenize them. Noralyn has examined 11 different species of wood. We are still looking at others. We have not studied woods outside of our wood radius, which is within 50 miles of the mill. Some species are more important than others, of course. But let me say that this is a very flexible process.

Q. Are you going to patent this process?

A. We are NOT going to patent this process. We intend to give it to the industry and tell the industry anything they want to know two years after we get into production. We feel that will give us a satisfactory production lead which is only fair.

Q. What about the brightness?
A. Well, you've seen the sheet. It's about 65, according to Herty, which seems about right. The difference between it and regular news is quite amazing, I think you'll agree.

Q. Did you avoid any issues in the question-and-answer period following the APA meeting?

A. Nothing astounds men more than absolute honesty. We have made no statements nor any claims that were not absolutely honest. According to Herty, they feel the sheet is equal to or better than any sheet of newsprint they have compared it to. Its appearance speaks for itself. Actually, there are 27 years of research behind this process. We're not newcomers to the industry, and we're not magicians. We worked long, hard hours to develop this process. There's nothing magical about it except the magic of hard work. We're not making any claims to be supermen.

Q. How big will the mill be?
A. H. K. Ferguson will design and build a 105,000-ton a year mill, and we will have some NSSC pulp for sale. Black-Clawson will build a machine designed for about 2,000 fpm. The furnish will be 100% hardwood from semichemical and groundwood pulp.

A leading figure in the woodlands picture added an appropriate post-script: "Anything new is bound to be greeted with skepticism, especially by those who'll be affected most. Look back at some of the distinctive progress that's been made in the industry in the last few years. Supposing I had come along 10 years ago and claimed I could make stretchable paper. Man, I'd have been laughed off the platform. We need progress in this industry. If this Noralyn paper is as good as they claim—and it sure looks good, hurrah for them. I'd a helluva lot rather be a hoper than a doubter..."



EDWARD W. HOPPER, Chairman of TAPPI's Corrosion Committee writes these comments for PULP & PAPER on the group's session during Paper Week. He is a nationally noted consultant on metallurgical and corrosion problems with offices in Pittsburgh, Pa.

• TAPPI's Corrosion Committee has has been broken down into four sub-committees as follows:

(1) Alkaline Pulping; (2) Neutral-Acid Sulfite Pulping; (3) Pulp Purification, and (4) Alkaline Digester and Overlay.

These sub-committees will operate with a chairman and secretary. They will develop information on problems in their particular branch of the industry, which will be pursued by committee members with the purpose of evolving answers and published papers. It is also the intent of the committee to develop information on materials of construction and good fabrication, and to make this specific information available to the industry.

The committee has under advisement a program to try to develop costs of corrosion in pulp and paper. If top management actually knew how much corrosion costs in terms of lost equipment, replacements, overspecified materials, downtime and damaged product, it would be more concerned with prevention.

The committee has a number of excellent papers to consider for the Engineering meeting in October 1960 at Jacksonville, Fla.

Corrosion:

• "Still a good field for stainless steel metallurgy" is how E. K. Scholz described neutral sulfite semichemical pulping at TAPPI's Corrosion Session at the Commodore. Warning that erosion problems of NSSC are far different than for kraft, acid sulfite or cold soda, he said that in the final analysis "metal-losing" control depends on choice of construction materials. Mr. Scholz is with West Virginia Pulp & Paper Co., Covington, Va.

The paper was prepared jointly with L. H. Park, Union Bag-Camp Paper Corp., Savannah, Ga.

In digesters, Mr. Scholz declared, severity depends to a great extent on the pH of the process. In tumbling digesters, the critical points are where chips enter and are blown; in stationary units, it is the vapor zone, and with continuous digesters it is in feeding operation (rotary valves and screw feeds).

Defibering, he said, reaches the ex-



MR. DYKE, veteran president of National Council for Stream Improvement, says revised research program was biggest accomplishment in '59...

Recognizing a problem and meeting it full-steam has been an APPA trademark over the years. Especially since World War II, this characteristic has taken on dual proportions.

Two Topics

Two of the most talked about topics—in meetings and informally—at the Waldorf-Astoria in February were stream improvement and community relations.

Stream Improvement:

Probably in no other fields has APPA exerted so much effort and realized such far-reaching and hopeful results. This year's annual meeting pointed up the work of 1959; but, more importantly, looked to the real breakthroughs set for the 60s.

Expediting Promising Projects

Packing the Astor Gallery of the Waldorf for the annual session of the National Council for Stream Improvement were more than 200 pulp and paper industry executives from throughout the United States and Canada. They heard George E. Dyke, reelected chairman of the board of governors, describe the vitality of the 1959 program. This, however, will be merely the basis for a dynamic decade ahead, he said.

Big accomplishment of the past year, Mr. Dyke pointed out, was a complete revision of the research program of the National Council. This was finalized with a view to expedite the more promising projects and to drop those where investigations seemed complete.

Oysters More Important

Now being readied for review and eventual publication are basic studies on aquatic biology as related to pulp discharges. Investigations have been carried out in the Midwest, South and Far West. Also under scrutiny have been such major problems as sludge dewatering and disposal, color and BOD reduction, Mr. Dyke declared.

Some realignment has been necessary, however, and Mr. Dyke praised increased mill interest and cooperation as stimulated by enthusiastic research personnel and far-reaching projects.

Some of the less common but equally important areas that have been realigned in order to increase their productivity in relation to present demands include: river slime, oyster investigations, reaeration, odor control, and improvement of stream analysis techniques.

Carrying the Message

Equally important to technical studies and results in many fields of pulp and paper research are the men

Big management problem

treme of the erosion-corrosion problem. This operation comes both before and after blow tanks and is done by means of single-disc, double-disc or combination refiner-washers.

Although the problem appears of course in the blow line, Mr. Scholz continued, it must be pointed out that straight piping sections are much less affected than bends. This is a field, he said, for important study.

The speaker warned that in stainless steel installation it is distinctly to the advantage of the mill engineer to (1) know the fabricator; (2) ascertain that the fabricator has a full knowledge of stainless, and (3) insist on a full analysis of the particular stainless used.

Careful choice of construction materials should be made, Mr. Scholz concluded, not only from the standpoint of chemical attack but in full awareness of the combinations of corrosion and erosion. In the latter case it has been sometimes found that these are complementary; one type of corrosion would not be found if erosion were not present.

Alkaline Pulping Problems

Ways of alleviating corrosion problems in alkaline pulping situations were discussed by W. E. Henricks, Mead Corp., Chillicothe, Ohio. His paper was prepared in conjunction with W. C. Barnwell, Gaylord Container div., Crown Zellerbach Corp., Bogalusa, La.

In a study of critical areas (not including actual digestion and pulp processing equipment), the authors found several methods of battling the corrosion attack against equipment, buildings, etc.

They suggest that: (1) equipment be sand blasted and/or wire brushed and coated with enamel paint; (2) cypress is more efficient than steel for window sash, and (3) roofing with corrugated asbestos is best in the pulp mill area.

New Alloys Introduced

Several new improved stainless alloys were introduced in a paper by J. M. Wilcox, W. R. Barber Jr. and D. D. Burgan, all of Electric Steel Foundry Co., Portland, Ore. The presentation was for general application in the pulp and paper industry.

It is anticipated that these new alloys will be used for those applications requiring a better specific or combination of properties than those heretofore available from standard (18-8 series) stainless alloys.

Importance of composition balance was stressed in the paper, as was molybdenum content. Other important aspects of the overall problem include control of melt analyses and control procedures in production of stainless alloys. Such control, the speaker warned, is vital.

"Dynamic decade ahead"

. . . GEORGE E. DYKE

who carry the message of the industry's accomplishments to the public. Such was the area of interest for the APPA Community Relations Committee, which devoted its 1960 session to a general and informal discussion.

Not so much an effort toward pinpointing specific problems (pollution, safety, etc.), this year's meeting undertook to develop the various methods by which a company can and does make the public aware of its operations and its accomplishments in the community's behalf.

Trailers and Television

Modernization of the traditional methods of community relations—newspapers, posters, meetings, employe activities—was shown to hold constant interest among industrial and public relations men in the industry. But, more important were the new ways of communications.

The Maine industry's success with a roving exhibit patterned after Wisconsin's famous Papermobile achieved recognition during this past

year of the state governor and legislature. Although no accurate check on visitors was kept, said one committee member, attendance far surpassed expectations. The exhibit—depicting the making of paper from woods to finishing room—was heralded at each stop by campaigns embracing both newspapers and television. The meeting's consensus seemed to be that the roving display is one of the newest and most effective methods of good community relations.

Far-Reaching Program

The gathering, keynoted by a brief report by Theodore F. Spear, public relations vice pres. for Oxford Paper Co., looked well into the future. A proposed handbook of good community relations for the industry was discussed by Theodore H. Davis, APPA staff member and committee secretary.

This publication will result from a survey now underway to determine not alone the most popular community relations techniques, but those that have been found to be most effective. The results of this project are to be announced sometime during this year.

End and Beginning

As one of the most discussed areas of community relations, stream improvement is moving forward in many fields, Mr. Dyke told the Stream Improvement Council. Air pollution is only one example. Research into this problem has been going forward for nearly four years. It is divided into the long-term fundamental study and the short-term investigation of immediate problems. A manual dealing with this problem as related to fuel burning is now being published by the National Council. Basic research was done at New York University.

Summing up 1959, Mr. Dyke stated that during 1959 the Council published some 19 technical bulletins, six general bulletins, 24 legislative bulletins and in the same period staged 13 regional and state meetings.—D.W.Z.



Kimberly

Whitaker

"IT'S BEEN A PLEASURE," says Robert E. O'Connor, executive secretary of the American Paper & Pulp Assn. as he warmly shakes hand of John R. Kimberly, exiting APPA president and chairman of the board, Kimberly Clark Corp. New APPA president is Howard E. "Whit" Whitaker, chairman of the board. The Mead

Profit Squeeze Is Major **Problem for This Industry**

This industry is riding the crest of record production and sales, outgoing APPA President John R. Kimberly told the Open Industry Meeting at Paper Week in New York, but it still hasn't achieved the profit mark of 11 or 12 years ago. Perhaps, he declared, this will be one of the real breakthroughs of this decade.

There will of course be many problems still unseen, Mr. Kimberly warned, but of the present difficulties facing pulp and paper no one doubts that solutions will be found-and quickly. He cited present turmoil over the Food Additives Amendment. The problem, he said, has already been greatly reduced and is well on the way to solution-thanks to fine cooperation between APPA (and other organizations) and the government.

Turns Over Gavel to Whitaker

An engineer by both formal training and practice, Howard E. Whitaker tasted the importance of APPA's presidency as he took the gavel of office from Mr. Kimberly. Mr. Whitaker is chairman of the board of The Mead Corp.

A graduate of MIT with a masters degree in 1925, Mr. Whitaker had early experience as a methods engineer with a Kansas firm before joining Mead Corp. as a member of the technical staff. Before 1930 he was technical director and then pulp supt. at Kingsport, Tenn., and in that year was made technical director of board mills. Two years later he joined the development staff in Chillicothe, O. Ensuing advances: 1934-gen. supt.,

Hopscotching Here and

Dill & Collins div., Philadelphia; 1936-asst. to operations vice pres.; 1943-asst. to the vice pres. of Mead; 1946-operating vice pres.; 1951-exec. vice president; 1952-president, and 1957-board chairman of Mead.

During World War II Mr. Whitaker served with WPB as deputy director of the Pulp and Paper Division, then on the combined Production and Resources Board and finally as a member of the Mission for Economic Affairs in London. He is a trustee of the Institute of Paper Chemistry, Appleton, Wis., and a board member of the Pulp & Paper Foundation, North Carolina State College.

Defense of Paper Merchant

The time is right to sell more paper, said Clifford Van Derbogart, president of Alling & Cory Rochester, N. Y. But, he warned that volume will not alone suffice. must do it in the most efficient, most economical and most manner possible.

"We should have little patience with any theory that the paper merchant is a needless middleman and has no place in our economy," Mr. Derbogart said. As near to indispensable as possible, according to the speaker, the merchant is today the best customer of the paper mill. Merchants employ a sales force totaling some 13,500 and are responsible for close to \$4 billion in sales. And this paper returns to the mill the greatest profit per ton.

Weak spots in merchant operations, said Mr. Derbogart, include need for (1): modern management methods; (2) more complete knowledge of industry's expansion programs; (3) cutting costs without cutting services; (4) more sales training, and (5) more customer training.

Mr. Derbogart urged mills to: 1, emphasize in national advertising that their papers are sold through leading paper merchants. 2. Continue to establish merchant advisory councils. 3. Do better in educating merchant salesmen. 4. Aid the merchant in obtaining competent young men. 5. Reexamine their direct selling policies. The merchant should be qualified to sell and bill all merchant grades in either sheets or rolls.

Three Weaknesses of Research

The weakness of pulp and paper research is that it "tends to go in a straight line instead of branching out. This was the theme of a talk by Dr.

A. H. Nissan, research professor, Rensselaer Polytechnic Institute, Troy, N. Y., and formerly with Bowaters in England and in research at Leeds, England, at the Open Industry session at Paper Week in New York.

Very little really new has been achieved and he suggested the industry should be able to breed trees without lignin or bark, just as seedless fruit was developed.

To stimulate new developments, he

suggested a three point program:

1. An end to intellectual isolation of engineers and scientists. More general knowledge is needed. Engage more scientists from outside the industry.

2. More faith in the basic ap-

proaches to problems.

Attract more revolutionaryminded scientists. Salaries are not a barrier, as they average out for all industries.

Fiber Picture is Changing, **Norwegian Chemist Says**

There is a feeling in the industry that the whole character of pulping is about to change drastically. It was evident at Canadian Paper Week with the scheduling of a full day session on the fundamental differences between sulfite and kraft pulps and again at TAPPI Paper Week in New York with sessions on various sulfite recovery systems and mechanical and semichemical pulping.

The feeling is very definite that the industry has come to a crossroads. It is known that 19 pulp companies (U.S.A., Canada and Scandinavia) have financed a study of sulfite and kraft pulping processes. One expert predicts that surprisingly, sulfite may get the nod because of economics. Another expert says that within a year one semichemical recovery system will win out. Then, he predicts, mills will not choose as between Cadillacs and Fords, but everyone will go for the system which has proven best.

Dr. Hans W. Giertz, professor of wood chemistry, Technical U. of Norway, and an acknowledged international pulping authority told this publication at Paper Week that the most significant impression he has of the meetings is that today "we are treating fibers that years ago were not considered to be good papermaking fibers. Now, they are the best for all kinds of fine papers and very much so, because papermakers know how to blend them properly. With separate

There at Paper Week

beating these short fibers have better

success than long fibers."

"It seems," continued Dr. Giertz,
"that the fiber as such is no longer as important in papermaking. The papermaker has to check beyond the fiber and find out what makes good paper. To me, the direction we have to take is to make as cheap a fiber as pos-

Roll Bending Solves Crown Problem

"Built-in" crown control on paper machine rolls took the industry by surprise during Paper Week. Halfway through the meetings, pre-prints of a paper, "A Practical Approach to Open-Side Calender Design," by Joseph E. Perkins, The Black-Clawson Co., were put through a second printing and such significance was attached to the subject that Frank T. Peterson, president of The Black-Clawson Co., called a special press conference with Larry Moore, director of engineering, on hand to explain the finer points of this new development.

The new development is called Accra-Nip calender and is used on an open side calender with an adjustable mechanical device for maintaining a uniform nip at the bottom roll under varying nip pressure loadings without regrinding the bottom roll crown. Main features of the calender are bottom roll bending and bearing weight compensators.

Bearing Weight Compensators

A uniform nip is maintained by keeping a uniform nip between all intermediate rolls which are ground straight. As the nip at the bottom roll is maintained uniform, all nips between all the intermediate nips will be uniform. Bearing weight compensators are used on each intermediate roll bearing housing to counterbalance the weight of the bearing, housing, doctor, etc. Counterbalancing all weight beyond the roll face allows each intermediate roll to transfer its weight to the roll beneath uniformly, thus eliminating the problem of edge or center loading.

What Black-Clawson has done is to extend the bottom roll journals beyond the main roll bearings on the tending and drive sides. Outside each main roll bearing, explains Mr. Perkins, will be a load bearing connected to a floor mounted hydraulic cylinder. These cylinders are individually controlled and used to load the roll journals up or down. This loading introduces end movements in the roll. Changing the magnitude and direction up or down of this loading changes the elastic or deflection curve of the bottom roll and controls the amount of crown.

Some advantages of this system of bending the rolls on the machine: wide variety of crown of rolls while machine is in operation; bottom roll crown; no regrinding of crown when changing bottom roll loading; crown adjustments made at console; all corrections for nip control or pressure made at one place, the bottom nip and no loading or unloading adjustments for intermediate rolls.

Beloit Describes Optimized High Velocity Air Drier

A new development which "affords the backtender an exciting new positive tool" has been described by Beloit Iron Works' R. A. Hurm. It is a high velocity air dryer to accelerate the drying rate of the sheet. It is aimed at cross machine moisture profile correction which will improve sheet finish and super-calendering.

Mr. Hurm said Beloit's objectives in developing this dryer were: 1. Production of a unit conducive to the best papermaking practices and not "broke catcher" or hindrance to papermaking; 2. A unit which rugged enough to be part of a reliable paper machine and stable enough to retain dimensional stability at elevated temperatures; 3. Inclusion in the package with the unit any auxiliary equipment that is necessary to operate at best possible efficiency.

Three-eighths in. holes are used and no filters are necessary in the system. This prevents clogging of holes. The dryer is also designed to be top-connected or end connected on either end. It will fit into a space on a five-ft. dryer that is only seven from the horizontal centerline. Very few dryers, said Mr. Hurm, will fit into so little space.

Good Will Called **Basis of SAPI's Success**

That the salesman's place in the industry is just as vital as that of the papermaker himself was the view of Joseph E. Hoffmann as he addressed the 41st Anniversary Luncheon of the Salesmen's Assn. of the Paper Indus-

Speaking to a standing-room-only audience in the grand ballroom of the Waldorf-Astoria, the SAPI president said: "As we enter the 60s, we have faith and confidence that SAPI will remain steadfast in its purpose, for evidence shows that its members and our great industry continue to be dedicated to the original basic principle of good will." Mr. Hoffman is asst. vice pres., Standard Paper Mfg. Co.

Highlight of the luncheon was in-stallation of the 1960 SAPI president, Gerard E. Veneman, vice pres. and director of sales for Nekoosa-Edwards Paper Co. He joined the firm in 1949 and was assigned to the New York sales staff, was transferred to Chicago in 1951 and became gen. sales mgr. in 1954. He was named vice pres. that year and now serves as a member of the board of directors. Also during Paper Week, Mr. Veneman was named vice chairman of the executive committee of the sulfite bond group in the Writing Paper Manufacturers Assn.

During Paper Week

For the third consecutive year, Buckeye Cellulose Corp., Memphis, Tenn., has won the National Paper Week Safety Award presented by APPA. The prize is given that mill with the lowest five-year cumulative accident frequency rate per 1,000,000 man-hours. . . . The oldest national trade association in the United States celebrated the beginning of its 100th year when M. C. Dobrow, exec. sec., called the opening meeting of the Writing Paper Manufacturers Assn. ... United States paper consumption rose by 34% in the 50's, said Robert E. O'Connor, exec sec. of APPA. In 1950 per capita consumption of paper and board stood at 383 lb., in 1959 it

Active participation by business men in government was urged by William Beckett, president of Beckett Paper Co., as he addressed the Writing Paper Manufacturers Assn. . record year in 1959 was reported by manufacturers of unbleached kraft. In a report to the Kraft Paper Assn. it was shown that production last year approximately 2.900,000 tons, 10% over 1958 and 25,000 tons over the previous record high (1956). . M. C. Dobrow of the Writing Paper group foresees overall paper and board production in 1960 approaching the 36,000,000-ton mark, up 2,000,000 from the 1959 record. In another Writing Paper Manufacturers Assn. action, the Rag Content Paper Group voted to change its name to the Cotton Fiber Paper Group. . . .



IN THE SOUTH is the Gilman St. Marys mill at St. Marys, Georgia.

Gilman Is Growing . . . Both North

• In the twenty years since its founding in July, 1940, St. Marys Kraft Corp. at St. Marys, Georgia, has spread out over 200,000 acres and has grown into an 800-ton a day kraft giant. This Southernmost town in Georgia is a river-width away from Florida and is 11 miles off the main highway between Savannah and Jacksonville. Here, St. Marys Kraft makes coated and uncoated paper, bleached and unbleached paper and paper board, and bleached and unbleached pulp for world markets.

Together, the St. Marys, Georgia and Gilman, Ver-

mont operations comprise one of the largest integrated pulp and paper companies owned entirely by one family and managed by its owners. The combined tonnages exceed 300,000 tons annually.

Started by Isaac Gilman in New York in 1881 as a paper distributor, the firm since 1944 has been under direction of Charles Gilman, Chairman of the Board, and, since 1950, he has been assisted by his two sons, Howard Gilman and Charles Gilman, Jr. John Price, well known in the pulp and paper industry, has been a consultant to the Gilman family since 1941.

St. Marys South: New Bag Plant

• The St. Marys mill, under the managership of George Brumley, Vice President, today is considered one of the most modern, fully integrated pulp and paper mills in the South. This pulp and paper mill produces more than 800 tons a day; about 350 tons of bleached paper board, milk bottle and foodboard, and about 250 tons of unbleached multiwall and grocery bag, kraft wrapping and specialty papers, and 200 tons of market pulp.

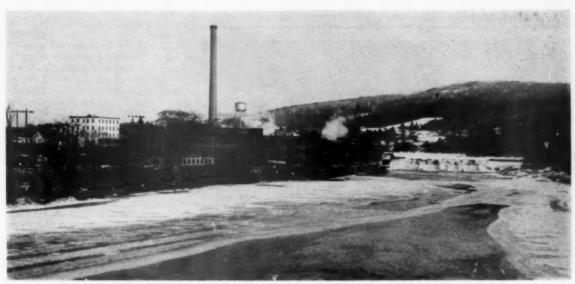
St. Marys Kraft Corp. has just completed a new, modern converting plant of some 300,000 sq. ft., and started operations in February, 1960. This plant will house the firm's combined multiwall and grocery bag, and other converting operations now carried on by Kraft Bag Corp. This new plant will be served by two side tracks of the fully dieselized St. Marys Railroad, a subsidiary of St. Marys Kraft Corp., which operates from St. Marys, Georgia to Kingsland, Georgia, where it connects with the Seaboard Airline Railroad.

The St. Marys pulp and paper mill, as well as the new converting plant, are located near the large Kings Bay Shipping Terminal. Built as a reserve major shipping point for ammunition and supplies for the Armed Forces overseas, it is now operated by private interests and boasts a 2,000 ft. dock which handles coastwise and ocean going vessels. This terminal is served

both by St. Marys Railroad and the Seaboard Airline Railroad, and can handle several hundred freight cars at a time. From this international terminal, Gilman ships its pulp and paper products to overseas and coastwise customers.

The conventional kraft process is used to cook chips in 13 carbon steel digesters. From the digesters, the stock is processed through separate flow lines to the paper machines. No, 1 paper machine produces unbleached kraft grades, while the newer No. 2 machine (started up in 1956) produces bleached board grades exclusively.

Brown stock for No. 1 paper machine, which is a Pusey & Jones Fourdrinier machine trimming 200 inches, is screened through Trimbey rotary screens, Impco centrifugal and Co-



IN THE NORTH, Gilman Vermont is the site of Gilman's specialty mill.

and South

In this first published report on the Gilman Paper Corp., PULP & PAPER thanks all those who cooperated with William F. Diehl, Jr., southern editor and Maurice R. Castagne, eastern editor.

The Gilman enterprises have grown steadily and dramatically. In 1911, the Niagara Bag and Paper Co., Tonawanda, New York, was purchased. The year before that, Mr. Gilman had made arrangements to become the sole distributor of the Fitzdale Paper Co., Fitzdale, Vermont.

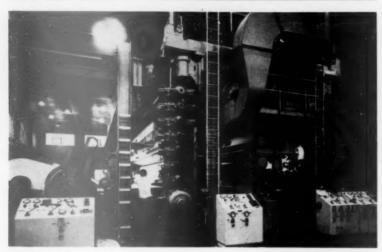
The town at a later date changed its name to Gilman, which speaks its own story of the relationship between the Gilmans and the town.

By 1921, the business of the Fitzdale Paper Co., Dalton Power Co., as well as Niagara Bag and Paper, had been absorbed by Gilman. Eight years later, the Gilman Light and Power Co. was incorporated to distribute and sell electricity to Gilman, Vermont and the surrounding areas. In 1932, Kraft Bag Corp. became the newest member of the family—a multiwall sack operation which was later shifted to the St. Marys mill in Georgia.

The year 1932 also saw formation of Millett Corp. to produce and sell mesh bags, twisted paper yarns, etc. In 1949, the name was changed to Cellucord Corp. ■



FRAMED BY TWO VERSATILE MACHINES, operator in machine room at St. Marys Kraft surveys kraft machine (No. One), left, bleached coating machine at right.



BELOIT COATER IS FRAMED BETWEEN CALENDER STACKS, is followed by three 60 in. dryer rolls.

wan rotary screens. Brown stock washing follows in two Impco multiple stage washers. There are seven washers in all, four in line in one section, and three in line in a new section of the pulp mill. Screened brown stock is thickened on two Impco vacuum thickeners and delivered to a 170-ton high density Stebbins tile tank and stored at 15% consistency.

Bleached stock is screened through four Impco bronze flat screens, followed by six Linblad screens, and finally by a new A44 Impco centrifugal screen. Stock is then delivered through stock lines controlled by Foxboro magnetic flowmeters to an Impco vacuum thickener and stored in 340-ton high density Stebbins tile tanks at 15% consistency.

No. 1 Machine

The press section of No. 1 machine includes two suction presses. A breaker stack, and size press are positioned among the dryers. Twin calender stacks include a 32-in. king roll, a 20-in. queen roll, and six 15-in. intermediates. The high speed reel can run up a 50-in. diameter roll of paper weighing 4½ tons in about 20 minutes. A high speed slitter and winder with individually controlled slitters complete the dry end.

No. 2 Machine

Of special interest, No. 2 paper machine, which is a Beloit machine having a 236-in. width wire, has an onmachine Beloit trailing blade coater, one of the first such Beloit units in operation. The coater is used to pro-

duce such grades as coated folding carton stock, principally for food products.

This fully instrumented modern Beloit Fourdrinier machine can produce 350 tons of bleached kraft and foodboard a day. Its speed ranges from 500 to 1500 fpm. with a 215-in. The 130-ft. long wire has ten 12-in. suction boxes and a 42-in. diameter suction couch.

Bleached stock is refined in six Sutherland refiners and four Jones Majestic Jordans. A Deculator with 24 primary, four secondary, and one tertiary unit, cleans and removes dirt and air from the stock before it is delivered to the headbox.

No. 2 machine has two suction presses, a third hot press, a smoothing press, and a breaker stack, plus a size press. The trailing blade coater is located between two sets of calender stacks, and the coater is followed by three dryers.

The Beloit heavy duty pneumatic reel handles rolls of about 11 tons with 60-in. diameter. A Beloit L20 double drum winder adjacent to the machine in a small finishing room, operates at 4,000 fpm. From the winder, Lambs-Gray Harbor layboy takes over, and the rolls are automatically conveyed through a 60-in. diameter roll heading machine, automatic head gluer, upender, and paper roll lowerator. Finished rolls are delivered to the lower floor next to a freight dock.

Stock for No. 2 machine is bleached in one of the most modern bleach plants in the world. The five-stage plant includes two chlorine dioxide stages and has a capacity of 350 tons/day of 90 GE brightness pulp.

Market Pulp

Market pulp is produced on a regular schedule and is delivered to the



FIVE STAGE PLANT uses two chlorine dioxide stages, makes 350 tons a day. Washers double shaft mixers, Impco.



REFLECTING MODERN ASPECTS of outstanding bleach plant is graphic panel in chlorine dioxide plant.



KRAFT MILL boasts one of most modern bleach plants. Crane is preparing site for new lime kiln.



INITIAL REFINING of both bleached and brown stock is carried out in 48 in. Sutherland refiners.

dryer from the Sutherland refiners. The Kamyr-Ross pulp dryer has an output of 175 to 200 tons of 90% b.d. pulp every 24 hours. The web is formed on a Sandy Hill Iron and Brass Works stainless steel suction mould and passes through two presses and is then air dried.

The pulp web is slit into sheets on a Paper Machinery Ltd. cutter and is delivered in stacks to an automatic Baldwin 600-ton press, where it is baled with a Tennant auto-wire twist lock bailing machine.

The main finishing department is on the lower floor and is equipped with rewinding and wrapping facilities and can be used for cutting, trimming sheets, skidding, stencilling, and steel banding.

About 25 freight cars can be loaded from a double track siding within the mill.

Modern Recovery

Black liquor recovery is provided by Goslin-Birmingham evaporators; one 5-effect and two 6-effect. They can handle up to 175,000 lbs. an hour. A Babcock & Wilcox with two Combustion Engineering recovery furnaces can produce up to 275,000 lbs. of steam an hour. Entrained chemicals are recovered from the air by two Research-Cottrell Electrostatic precipitators.

New Lime Kiln

A new lime kiln, just being installed, 11-ft. diameter by 275-ft. long, has a daily capacity of 300 tons and replaces two older kilns which will be used for stand-by capacity. Recausticizing equipment includes a Dorr-Oliver 2-compartment green liquor clarifier, one 4-compartment dregs washer, two slakers, five causticizers, a 6-compartment white liquor clarifier, and two 2-stage lime mud washers. Soap skimmings from the cooked wood chips are converted to crude tall oil by a DeLaval continuous acidulation process and sold as a by-product to the paint and varnish industries.

Steam pressure for the mill is pro-

vided by three Babcock & Wilcox boilers. The largest unit produces 300,000 lbs. of steam an hour, at 600 lb. pressure and is oil fired. A second boiler produces 100,000 lbs. an hour at 600 lb. pressure and has a Hofft bark furnace. The smallest boiler produces 60,000 lbs. an hour and also has a Hofft bark furnace. The furnaces burn 67,200 gallons of fuel oil and 225 tons of bark a day. Some 3,000 lbs. of dry solids per ton of pulp are also produced from the black liquor.

The generators are all General Electric, and a GE Limitamp control provides electric power protection. The newest turbo-generator is the largest: 18,750 kva, 13,800 volt, double extraction, surface condensing turbo with hydrogen cooled generator. The other two units are 6,800 kva from 2,400 volt double extracting, and 3,750 kva from a 2,400 volt single extraction unit.

Six 1.5 million gallon deep wells provide part of the 34,000,000 gallons of water used each day.



BLEACHED and unbleached kraft paper machines will have third, like one in foreground, 236 in. wide.



POWER IS SUPPLIED by three Babcock & Wilcox recovery boilers. Newest is this 300,000 lbs. an hour unit.

... GILMAN



SCHMUTZ PRINTING PRESS is used for reproducing one to six colors on multi-wall bags.



LARGEST OF THREE TURBOS generates 18,750 KVA. G.E. unit is double extracting, hydrogen cooled.



SEWING MACHINES handle règular jobs, also tape oversewing, heat-sealed tape.



RESEARCH, ENGINEERING DEPARTMENTS have latest modern facilities, including color printing press.

Growth at the Gilman Mills

St. Marys Kraft Corp. has just completed an engineering study for a third paper machine which will be a duplicate in size (236-in. wire) of No. 2, except that it will have a secondary headbox. The machine will be either for bleached board production or unbleached linerboard.

Pulp, electricity, steam and other facilities are already ample at St. Marys to accommodate the new machine. The question remains as to installation of the machine and doubling of the bleach plant facilities if the decision is for bleached board.

At Gilman, Vermont, orders for re-

building No. 2 machine have been placed. A new fully automated pulp preparation plant will permit blending of all types of paper pulps which Gilman uses. Also of special interest is the fact that Gilman is now studying the feasibility of building a pulp mill at Gilman, Vermont, to use the local abundant hardwoods. This would replace some now being produced for the Gilman mill at St. Marys.





NEW BAG PLANT at St. Marys went into production in February. At left, air view of bag plant under construction. Self-opening bags and specialty sacks ranging from ½ lb. to 25 lbs. in bags and up to ¼ lb. sacks will be made.



KRAFT CORD IS TWISTED on these twisting machines developed by B. Milton Kimball, resident manager.



NO. 2 PAPER MACHINE (right) will be rebuilt. This trims 152-in. No. 1 machine (left) trims 136-in. Both machines produce upwards of 150 tons/day of bleached and unbleached kraft specialty papers.

Gilman North Pioneers Kraft Cord

● There is talk today that in the sixties the paper industry will invade the textile field. Cellucord did this almost 20 years ago. In 1941, a leading carpet mill was about to shut down because of a shortage of jute yarn. B. Milton Kimball, resident manager of the Gilman mill and general manager and treasurer of Cellucord Corp. convinced the carpet mill that kraft cord was a good substitute.

The idea spread like water on glass until at the present time Gilman is supplying in excess of 1.5 million lbs/ month of kraft cord to carpet mills.

"Kraft cord saved the carpet industry," says Mr. Kimball, "and it became a standard item instead of a substitute. Today it is used in some of the best woven quality carpets. Cellucord gives a carpet 'hand' and stability, and Cellucord Corp., a Gilman subsidiary, produces about 70% of

this type of yarn used in the carpet industry."

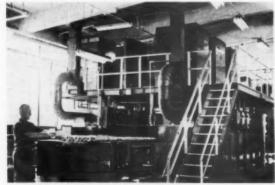
Today. Cellucord on their experimental looms are weaving kraft cord scrim which is used as a backing for tufted carpets. The widest of these is a 205-in. loom, and the carpet manufacturers are enthusiastic about this new product. Knowingly proud of their product, Gilman points to the fact that for three years knitted or specially treated, woven kraft cord sandbags have been reinforcing a dam in a Gilman, Vermont pond. Under water winter and summer, the bags show no sign of wear or deterioration and are just as strong as the day they were put under water. These sandbags have been approved by the U.S. Government for emergency use in flood control, and Cellucord is now carrying on a government project to further improve this product.

Cellucord owns and operates two converting plants, one in Gilman and one in Richmond, Vermont. These are equipped with twisters, winders, and other auxiliary equipment to manufacture twisted paper yarns. A majority of the stock of Cellucord Corp. is owned by Gilman Paper Co.

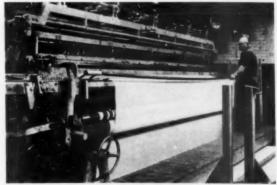
Papermaking and converting facilities include two paper machines trimming 136-in. and 152-in. producing more than 150 tons a day of bleached and unbleached, printed and unprinted, kraft specialty papers. Converting operations include printed gummed sealing tape, printed asphalt, and wax laminated papers and Cellucord twisted paper yarns.

The gum tape department has two 51-in. trim machines, each equipped with two beta gauges to control the amount of glue coating.

The Gilman mill is on a 265 acre site which includes a dam and the riparian rights on the Connecticut River, capable of 6,000 hp.



UNIFORM MOISTURE CONTENT is important for kraft cord. Dielectric dryer was made for Gilman by G.E. Res. Mgr. Kimball got the idea from diathermy machines.



PAPER CORD IS WOVEN on this experimental loom and used for backing on tufted carpets. Cellucord is also working on other fabrics that could be made on these looms.

Who's Who at Gilman Paper Corp.



Charles Gilman, chairman of the board.



Harold Holden, president and general manager.



Howard Gilman, executive vice president (administrative).



Charles "Chris" Gilman, Jr., executive vice president (operations).



Herman Gilman, secretary.



B. Milton Kimball, Resident Manager, Gilman, Vt.; gen. mgr. and treas. Cellucord Corp.



John Herbert Price, consultant.



George W. Brumley, vice president and general manager, St. Marys.

The Companies in the Gilman Group

are: Gilman Paper Company, Gilman, Vt.; Gilman Electric Light & Power Co., Gilman, Vt.; Cellucord Corp., Gilman, Vt.; St. Marys Kraft Corp., St. Marys, Ga.; St. Marys Railroad, St. Marys, Ga.; Kraft Bag Corp., St. Marys, Ga.; St. Marys Railroad, St. Marys, Ga.; Kraft Bag Corp., St. Marys, Ga.

Russian, Other European Mills, Subject of Talk

Visits to a Russian mill and the Central Pulp and Paper Research Institute of Russia, as well as interviews with top pulp and paper planners of the State Planning Commission in Moscow, will highlight a talk by Albert W. Wilson, editor of PULP & PAPER and PULP & PAPER INTERNATIONAL, at a luncheon for members and guests of the Valley Industrial Salesmen's Association (VISA) on Monday, April 4. It will be in Appleton or Neehah, Wis.

Mr. Wilson also will discuss industry operations and trends in 12 other European countries he visited.

So. California Group Tours U. S. Gypsum

Manufacture of wallboard for gypsum sheathing was spotlighted at the March 15 meeting of Papermakers & Assoc. of Southern California.

A regular business meeting in Los Angeles was preceded by a tour of U. S. Gypsum Co.'s No. 2 mill at South Gate, where wallboard is produced for the company's sheathing operation.

The business session included discussion of a proposed club paper award and officers for the coming year.

Fifth Industry Seminar At Institute of Paper Chemistry

The Fifth Industry Seminar conducted by The Institute of Paper Chemistry in Appleton, Wis., will begin on June 15 and will continue through July 7. This summer program is designed to give men in the pulp and paper industry an increased awareness of the contributions to be made by science and technology to the industry. Increasing specialization makes it difficult for men to

achieve such an awareness within the confines of their daily routine.

Presentations by Institute staff members will provide the core of the Seminar, offering participants an unusual opportunity to engage in an interchange of knowledge and experience with the instructional staff and other members of the Seminar.

Evening dinner meetings will be held, featuring guest authorities on subjects related to science and management.

The seminar will be under direction of Dr. A. Neil McLeod. Twenty-four participants, representing as many companies, will reside in Lawrence College fraternity houses.

Pusey & Jones Bankruptcy

Wilmington, Del. manufacturer of papermaking equipment confirms sale of all assets except real estate, buildings, equipment, etc. to John Inglis Co. Ltd., 14 Strachan Ave., Toronto, Ont.

New Glassine Mill "To Round Out South's Picture". . . **HODGDON**

• The oft-repeated prediction of a decade, and even two decades ago, that the Southern kraft industry of the United States would some day match the North in variety and quality of grades is making a big leap closer to

that goal.

Deerfield Glassine Co., Inc., Monroe Bridge, Mass., is pioneering the first production of glassine and greaseproof papers ever to be made in the South in a new mill going into opera-tion next April, 1961. Bleached quality kraft pulp will be piped in slush form from the new pulp mill built by Robert Gair division of Continental Can Co. in Augusta, Ga., to an adjacent new paper mill, in the same city—the new Deerfield plant.

This will round out the picture for Southern kraft," Paul Hodgdon, chairman of the board, and Richard Probst, president, Deerfield's top executives, told PULP & PAPER in an interview.

Enough critical improvements have been made in hydrating and cooking of kraft to make possible the introduction of these new paper grades in the South, they said. It may come as a surprise to some papermakers to know that the Deerfield mill in New England is already primarily using Southern kraft quality bleached pulp. Even years ago, at its former Turner Falls, Mass, mill, now part of Strathmore Paper Co., Deerfield made some glassine from 100% kraft.

That is exactly the plan at Augusta -100% kraft furnish. There is no idea of using semi-chemical or Mitscherlich

pulps or other grades.

The Deerfield executives recalled that the South has gradually become a producer of many quality gradesbond papers at Mobile, then tissues, special lightweights at Palatka, book papers at other mills, etc.

"Properly cooked and properly handled, we will be able to make other lightweight grades not made presently in the South," Mr. Hodgdon and Mr. Probst told PULP & PAPER.

Actually, the general layout and equipment of the mill will be quite similar to the layout and equipment of Canadian Glassine Co., Quebec City, in which Deerfield shares ownership with Anglo-Canadian Pulp & Paper Mills. Pulp for that mill is piped from the Anglo-Canadian pulp mill. Deerfield operates two machines at Quebec and three at Monroe Bridge.

The Augusta machine will have a

110 inch wire and trim 95 inches. It will be 80% new, with a special wet end built for it. Practically everything but the dryers, and even some of these, will be new.

Three months before startup selected men from Monroe Bridge and possibly Quebec will go to Augusta to be a trained nucleus for the staff. Other key men will go there for a period of about six months after

startup to assist.

Charles F. Hill, plant manager at Monroe Bridge, formerly with Sorg Paper Co., and an engineering graduate from Ohio State, as well as Fred Bolner, now general supt. of the Deerfield company, and a veteran glassine maker in many parts of the U.S.A., will be among important key men on whose shoulders will rest much of responsibility for getting the new operation going.

Mr. Hodgdon has been with Deerfield since 1929 when he went there as a consultant after experience with Munising Paper Co. and Eastern Paper Corp. He was president of Deer-

field from 1937 to 1959.

Mr. Probst succeeded him as president in June 1959, after coming to Deerfield as Mr. Hodgdon's assistant in Nov. 1958. Mr. Probst gained his early experience in glassine and greaseproof when serving as assistant general manager of the associated Oregon Pulp & Paper Co. and Columbia Paper Mills out West. He earned a Ph.D. degree at the Institute of Paper Chemistry prior to that. More recently he held high executive posts with Eastern and Brown Co.

Practically 98% of the markets for this new glassine-greaseproof mill in the South will be for food packaging. Other markets will be industrial applications and pressure sensitive la bels. The markets will be scattered over the entire South, for which the Augusta area of Georgia is a strategically located shipping center. Production of the mill will be about 6,000 tons a year-this type of product doesn't add up to big tonnage.

What Deerfield is doing is quite similar to the policy of Crown Zellerbach in recent years in locating its so-called "little" machines in important paper market areas in the west. The present freight costs for glassine and greaseproof South was described "terrific high cost item."

Hydration-so important to glassine -will be achieved in slush form.



HODGDON



PROBST

Local power facilities will be used and a major attraction at Augusta was the low power rate. The wet end will run at high temperature. Much stainless steel will have to be used all the way through this mill.

There will be stock preparation equipment, probably more or less standard for this grade. There will be supercalenders for full width of the paper. There will be two rewinders, one for production and one for cleanup. Probably also some laminating and waxing equipment. Products will be shipped in rolls.

The Deerfield plant at Augusta will

employ about 100 workers.

Mr. Hodgdon and Mr. Probst look for a strong demand for their product. They said that the glassine and greaseproof business is now an "off the shelf" business. Customers want paper "the next morning" virtually, in many cases. In Augusta, the company will be able to give excellent service to Southern customers.

Just about a year ago, Deerfield added a second machine to its operation in Quebec City. It started that plant six years ago. Now it makes about 6,000 tons a year. The company got started in New England back in the middle 1920's.



BLEACH PLANT DESIGNED FOR 75,000 TONS for a new sodium bisulfite pulp being manufactured at Stora Kopparbergs Bergstags AB Skutskär mills. Kamyr washers with German PIV units and Fischer Porter designed control center.

A New Soda Base Pulp

A first hand report from Stora's expanding Skutskar mills. A 2-stage sulfite process, what it accomplishes

By ALBERT W. WILSON Editor, PULP & PAPER

• At the Stora pulp mills in Skutskär Sweden, birthplace of the two-stage Sodium base sulfite pulping and recovery process, there are no waste liquors dumped into the mouth of the Dal River until after burning and recovery of chemicals and of energy for mill operations. Then it is only a trickle, comparatively, after recoveries in both kraft and sulfite mills.

When the writer recently visited Skutskär near Gävle (about 70 miles north of Stockholm), bleached kraft pine operation had been expanded in a few years to 75,000 metric tons a year. Thanks to the success and savings of the two-stage sodium bisulfite process, bleached sulfite pine pulp is being expanded from 40,000 to 80,000 tons. The double cooking

technique and a special depithing process overcame the problem caused by the high resin content of pine wood. Furthermore, a bleached birch sulfate pulp is adding another 55,000 metric tons to Skutskär's production. Thus, total Skutskär output will be virtually doubled by 1962.

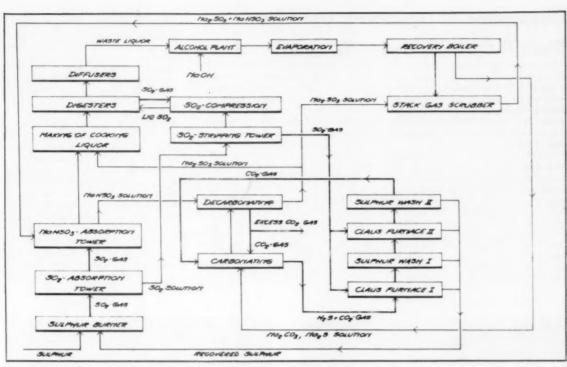
As long as the sulfite mill was small, it was all right to send recovered chemicals to the sulfate mill. Pulp chemists well know the limitations of this practice. The answer to expansion was the new process, effecting a complete separation of the sulfite and kraft mills. Ironically, now that it is a success, pine must come from much greater distances. However, the Stora soda process is applicable to any species of wood, even hardwoods, but the latter is more suitable for sulfate.

Another reason for the develop-

ment of the process at Skutskär was so that pine for sulfite could be routed to this mill, while all spruce could be sent from the Stora and farmer forests to the newsprint mill at Kvarnsveden, which makes about one-fourth of Sweden's newsprint.

Bleaching of Stora 59 (sodium bisulfite pulp) is 6 stages as follows: Chlorination, caustic, chlorine dioxide, second caustic, second chlorine dioxide, and finally, a soaking stage. For Stora 32 (kraft) and also for the future birch pulp at this mill, there are eight bleach stages: Chlorination, caustic, hypochlorite, second caustic, chlorine dioxide, third caustic, second chlorine dioxide, and soak. There is enough bleach capacity for the coming sulfite expansion, but a new bleach plant is being built for kraft.

I toured the Skutskärsverken with Per Collin, its general manager, and in



FLOWSHEET OF SODIUM BISULFITE RECOVERY PROCESS

Falun, company headquarters, talked at length with Karl Cederquist, chief of Stora's central research laboratories, and Gunnar Crafström, head of pulp and paper sales, all closely identified with the development, but all were agreed that this was essentially a typical teamwork development.

Mr. Collin explained that with calcium base, there never was good yield with pine. A big step forward came in 1955 with the chance to rebuild the sulfite mill. But only when the new sulfite bleach plant was completed in the past year, did Stora really have the opportunity to step out with its new pulp on world markets. It is a strong, bright and clean pulp with soft sulfite flexibility and dewatering properties.

Mr. Collin said yield is 5% higher than for ordinary sulfite and 15% higher than bleached pulp of the same brightness for kraft. On my day of visiting, brightness was 92 to 93% G.E. Strength characteristics recorded were on a par with kraft, but tear was lower. On the machine, it has better flow than bleached kraft, operators said

World's Oldest Corporation Replaces Copper with Forest and Steel Products

Stora Kopparbergs Bergslags, AB, is generally recognized as the world's oldest corporation.

On June 16, 1288, Nicolaus Christensson sold a one-eighth share in a central Swedish copper mining company and that transaction was the first of its kind by a still-existing corporation. It is recognized as the beginning of the Stora enterprise.

A PULP & PAPER editor, visiting headquarters of this 672-year old concern in Falun, 150 miles northwest of Stockholm, was proudly shown through a company museum, displaying ancient royal documents, primitive mining equipment, and ingenious dis-

plays of Stora's varied products and plants which now make newsprint, woodpulp, lumber, steel and heavy chemicals. Stora has a half interest in the largest oil refinery in Sweden. Also it produces 1.5 billion kwh. of electricity at its hydro plants and is Sweden's largest private owner of farm lands.

Its history tells of Stora once paying ransom to the Danish Crown to free a Swedish port. At one time it held a world monopoly in copper. The roof of Versailles Palace and others are made of Stora copper. The name of the company means "Great Copper Mountain mine."

The company will not change its historic name, even though paper, pulp and steel have replaced copper as its major products, bringing annual sales to about \$120,000,000 and after taxes profits to about \$7,000,000.

Its forests, covering about 760,000 acres of mostly pine and spruce (90%) were acquired and developed over 100 years, at first only as a source of fuel for copper smelting.

Now its plants annually consume 48 million cubic feet, 27 million from its own forests. The rest is purchased from farmers. With this it makes annually about 200,000 metric tons of newsprint, 75,000 metric tons of bleached sulfate (kraft pulp) (Stora 32) and 40,000 metric tons of bleached sulfite (Stora 59), as well as sawn wood products. Pulp production is being doubled by 1962.

Description of Equipment Used for Stora Pulps – 2 Stages Widen Range

There are now six digesters of 150 cu. meters each, but three more are being added of larger capacity. Presently cooks are about fifteen hours, cover to cover, whereas kraft is eight hours. But here at Skutskär, cooking is in line with typical longer European cooks than in North America.

The two cooking stages operate with different pH conditions. In the first, the wood is impregnated and partly sulfonated with an almost neutral sodium sulfite liquor. Chips are still whole, but softened. All liquor is taken off. Then in the second stage, the important removal of lignin is done by administering acid SO₂ in the same digesters. The required sodium base yields a highly soluble bisulfite. The mild cooking lessens hydrolytic

destruction of carbohydrates in the fibers. Thus, the process is suitable for other woods not normally used in the conventional sulfite process.

Mr. Collin said the two stages make possible a whole scale of qualities. Depending how sulfonation and hydrolysis are achieved, pulps can be produced for a wide range of papers from glassine to strong cheap papers.

Washing in diffusers and screening on Biffar screens and Sunds Lindblad vibrating screens follows cooking, but with chlorine dioxide bleaching, use of all of this plant is not required. However, it is entirely used for unbleached pulp. Bauer-type Centricleaners follow the Lindblads.

The new bleach plant has mostly Kamyr equipment, including their new stainless steel washers. Six aluminum-sheathed bleaching towers are fed from bottom upwards with aid of Impco (Improved Machinery) thick-stock pumps. An interesting point is a recent decision to take out a PVC plastic lining in towers to replace in part with brick tile. The plastic cracked with expansion.

Leeds & Northrup designed a

Leeds & Northrup designed a graphic panel and provided much of the instrumentation in the bleach plant. Kamyr washers have variable speed PIV drives from Germany.

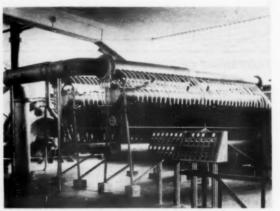
In 1948, Stora was one of the pioneers in bleaching with chlorine dioxide in its kraft mill, and the name of that bleached kraft, Stora 32, denotes the year it first reached world markets—1932. In the kraft mill there are eight digesters in two groups with common blow pipe. These are mild steel and metals-wise Stora men say it is better steel than is available



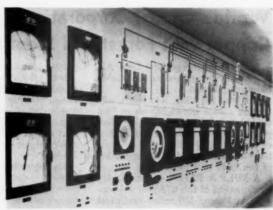
AT TOP OF SULFITE DIGESTERS used in making soda base pulp. Something amused Editor Albert Wilson and General Mgr. Per Collin.



BLEACH TOWERS—all fed upward with special thick stock pumps made by Improved Machinery Inc. (Impco). Each tower is sheathed with aluminum. They are tile-lined.



INTERESTING VIEW OF BATTERY of Bauer Centricleaners in the bleach plant of the Stora sulfite operation, making Stora 59.



PART OF CONTROL PANEL for sulfite bleaching. Designed by Fischer Porter, its instruments are prominent in foreground.

nowadays, which is one good reason there has been no corrosion problem in 20 years. Birch kraft digesters will be added.

From digesters, the kraft pulp goes to diffuser washing, and then to Cowan, Biffar and flat screens, before the bleaching, already described.

In the sulfite mill, the new process brought a change in use of evaporators. Three are being washed now with condensate from the three others, while the latter three are operating. It is in this way, scaling is eliminated.

For the expansion, one new Babcock & Wilcox 450-ton recovery boiler exclusively for the kraft mill is being built. Honeywell controls and measuring instruments are used in the recovery plant.

For drying operations to take care of the new sulfite and kraft expansion,

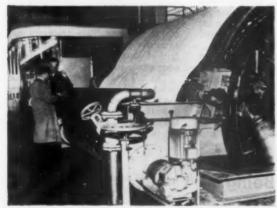
two of the new air-borne Svenska Flaktfabriken dryers, preceded by Karlstads Mekaniska Werkstad Four-driniers, will be started up in 1960. In the dryer section, stock never touches conveyors or hot surfaces and is conveyed by a high velocity stream of heated air. These will be 4.2 meters in operating width. They will replace five old Fourdrinier drying machines used today.

Hillbom Barkers "Ideal" for Small Wood

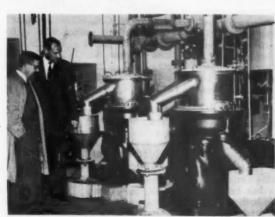
The story of Skutskär is not complete without describing a barking system developed here about five years ago which is still not widely known in the rest of world. This is a stationary friction plant called a Hillbom barking system and built by Finnshyttan, which is near Karlstad,

Sweden. There are now two in use and two more are being added this year. They are followed by KMW chippers.

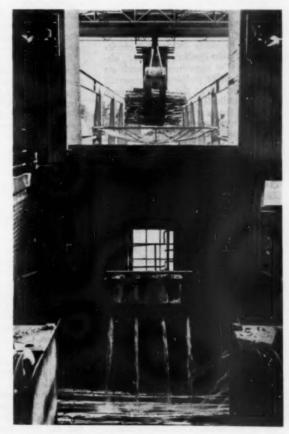
There are advantages in the Hillbom barker which may become increasingly important as mills clean up the woods more thoroughly in the future, using small sticks as well as larger logs. The unit consists of two open rectangular vats with live bottoms consisting of heavy helical screws which, when revolved, give a rolling and mixing motion to the wood. The wood is loaded by a huge grapple operated from a bridge crane. After a period of time, the wood is removed by the same means. The charge is 15 cubic meters of stacked wood.



CLOSEUP OF ONE OF KAMYR WASHERS in Stora's new bleach plant. Six-stage process is important in quality results with soda base pulp.



YEAST SEPARATORS IN ALCOHOL PLANT of the Skutskär mills. The two separators provide for a profitable sulfite by-product.



SPECIAL SWEDISH TYPE BARKING UNIT which Stora operators consider best for their operation because it is suitable for small sticks as well as large. Stora is doubling the installation. A huge grapple with a 10,000 kg Hylan overhead crane feeds and unloads the barking unit, as shown here.

Stora Kopparbergs Studied Soda Pulping Over Span of 35 Years

By KARL N. CEDERQUIST Chief of Stora Kopparbergs Bergslags AB Central Laboratory

The extreme high prices of coal in Sweden during and close after the first World War made it highly desirable to utilize the organic substance in the sulfite waste liquor as fuel and gave rise to an extensive research on evaporating and burning the waste liquor in our sulfite mill at Skutskär.

The scaling of the calcium sulfite waste liquor proved to be a serious drawback in our efforts to utilize the liquor and could only partly be overcome. In this situation the idea was born to change the base in the cooking acid from calcium to sodium and in such a way eliminate the difficulties caused by scaling.

With coal prices rapidly going down to a more normal level the burning of the liquor lost a good deal of interest but due to many interesting results regarding pulp quality, yield, etc., obtained in the experimental work on sodium bisulfite pulping the research was carried on at the mill, although more sporadically.

During the years 1922-1927 most of the work was done in investigating the cooking process. Also different ways to solve the recovery of chemicals were investigated and the first scheme was developed for using the smelt for make-up chemicals in the sulfate pulp mill.

During this period it was also established that pine wood could not be processed in a conventional sodium bisulfite cooking process.

In 1928 the research work was turned over to the Stora Kopparbergs' Central Laboratory in Falun, where the two-stage soda base pulping process for using pine first was developed.

In 1939 the digester section in the mill was rebuilt with the idea of processing pine in a two-stage cooking process

During the years 1940-1944 the work was concentrated on scaling up the recovery system and in 1944 the first full scale recovery unit was completed and the sulfite mill was changed over from calcium to sodium base for processing spruce in a conventional one-stage process.

Because of expansion of sulfate (kraft) pulp production at Skutskär the interest in sulfite processing of pine occasionally had declined somewhat. The technical difficulties encountered in trying to convert the conventional one-stage process to sodium base caused also a good deal of worry and



KARL N. CEDERQUIST-No one in the world has devoted more years to study of soda base sulfite pulping.

particularly many problems connected with the recovery of chemicals were very difficult to solve and the project of processing pine was postponed to a later time.

Late in the 1940's the situation again had changed and sulfite processing of pine was considered to be of great importance in order to carry out a proposed expansion of our pulp production. Consequently, our investigations of the two-stage cooking process, including all auxiliary processes such as recovery of chemicals and production of liquid SO₂ were looked over once again and carefully revised.

The full scale sodium bisulfite processing of pine was started in 1954 and the final recovery system was put into operation early in 1958. Since then the sulfite mill has operated as a quite independent unit.

Second Mill in Sweden and One Being Built in Canada to Use Stora Process

Interest in the two-stage sodium base sulfite pulping process developed and put into full scale operation at Skutskär, Sweden, in 1955, has been picking up very rapidly in these recent months.

Mo och Domsjo AB, one of the biggest Swedish pulp and forest industries companies, recently started up a second two-stage sodium base plant at Ornskoldsvik, Sweden, using the Stora recovery system under license from that company.

Engineering and construction are increasing in tempo for the new Nova Scotia Pulp Ltd. mill being built about two miles from Port Hawkesbury, Nova Scotia, on Canso Straits, which will be the third mill and the first in America to use the new sulfite cooking and recovery process. It will be making pulp in early 1962.

One of the highlights of the TAPPI

technical program in New York City in late February was a paper describing the Stora recovery process. It was a subject of top interest at both the American meeting in New York and the Canadian meeting in Montreal this winter. Representing Stora in marketing the recovery process in America is Vulcan, Cincinnati, Inc., of Cincinnati.

The Nova Scotia development is owned 80% by Stora and 20% by Scott Paper Co.

Construction began last summer on a mill of 350 tons of bleached sulfite pulp per day. Charles T. Main, Inc., Boston, are consulting engineers. Walter Holland, who has extensive experience in pulping in both east and west Canada, is vice president and general manager.

An important asset for Nova Scotia Pulp is its long term license for use of 1,200,000 acres of Crown forest lands in Nova Scotia. The Nova Scotia mill will make sodium base pulp from spruce and balsam. In Sweden, Stora's mill processes pine.

Analytical Data on STORA 59

92-93
0.05
> 100
83.2
1.4
15.2
5.0
17.9
17.7
0.1
< 0.001

Strength of STORA 59 after Beating in a Lampén Mill

Degree of beating, ⁰ SR	45
Beating revolutions	13000
Tensile strength, m	10200
Bursting strength, kg/cm ²	7.0
Tearing strength, g	70
Double folds	3300

Dryer Installation: Near-Completion of Long-Range Program at Oregon Pulp

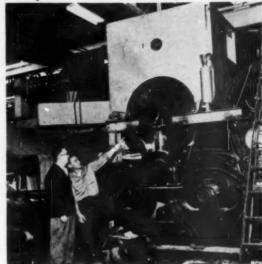
Long-range modernization at Columbia River Paper Mills' Oregon Pulp & Paper div., Salem, Ore., shows significant results.

Recent installation of a Gardner dryer-first such unit in production in the Pacific Northwest—rounds out another segment of the plantwide program. According to Cecil Taylor, gen. mgr. of manufacturing, overall objective is to modernize this 150-ton per day fine paper mill with view to improving both products and competitive position.

During the past four years the Salem plant has been extensively instrumentized, utilization has been materially improved throughout by using lumber and veneer residue wood. Other completions include increasing finishing room capacity; changing over to complete caustic bleach system; rebuilding existing washers and installing additional washing capacity; doubling saveall capacity on each of the four machines.

By late this spring the mill's steam plant will have been rebuilt and steam capacity increased 160,000 lbs. per hr. with the addition of two Erie combination gas-oil boilers. A new headbox and stainless Fourdrinier (both Valley Ironworks) are to be installed on No. 1 machine and the drive speed

NEW GARDNER
DRYER UPS FINE
PAPER PRODUCTION on No. 4 machine at Oregon
Pulp & Paper. Discussing installation
are Jim Fahlstrom
(left), company design engineer, and
Bill Luebke of Overly's Inc., who supervised erection of gasfired unit at wet
end of dryer section.



increased from 600 to 900 lfpm. Operation is set for mid-summer.

The Gardner dryer has increased production on No. 4 machine. As pointed out by Mr. Taylor, the machine's capacity could not have been increased by adding conventional dryers because of space limitations. Production of fine paper on No. 4 was increased by 15% since the Gardner dryer unit went into operation in De-

cember. The air supply component of this package job, fired by natural gas, delivers hot air to the dryer at a velocity of 18,000 lfpm. Although air temperatures up to 600°F have been tried, 450° was determined as the most efficient for this installation. Prior to the addition of this Rice Barton dryer unit, top speed of No, 4 machine was 600 fpm. Now it ranges to 720 fpm.

Arizona Timber Plans 360-Ton Kraft and Newsprint Mill

Final award for the sale of 6 million cords of national forest pulp timber in the Southwest, which will mean a new pulp, craft, paper and newsprint industry for Arizona and improved timber stands on 1½ million acres of national forests, is announced by the U.S. Department of Agriculture.

The Southwest Lumber Mills, Inc., of Phoenix, Ariz., was awarded the timber, located on the Colorado Plateau of Arizona and New Mexico in the Kaibab, Coconino, Sitgreaves, Apache, Tonto, and Cibola National Forests. The timber consists of small and low quality ponderosa pine and other species which will be thinned and salvaged. The contract is for 30 years. Assured of a long-range supply, the company is speeding up plans for construction of a pulp and paper mill near Snowflake, Ariz., with daily capacity of 150 tons of kraft paper or board and 210 tons of newsprint. Em-

ployment at start of operations in 1963 will be 400 persons.

"The timber on the Colorado Plateau need this thinning," Richard E. McArdle, chief of the Forest Service, pointed out, "It will give other trees a chance to grow larger and quality will be better."

Nicolet Mill to Install Largest Glassine Supercalender

The largest glassine supercalender ever built will be placed in operation at Nicolet Paper Corp., West DePere, Wis., early this year as part of an expansion which also includes a new paper machine.

Designed and built by Appleton Machine Co., the 147 in. wide, 16 roll supercalender stack is the third to be installed since 1955, each being larger than its predecessor. Powered by a 600 hp Westinghouse dc drive, the unit is designed for a maximum operating speed of 1500 fpm. The maximum lineal inch nip pressure at the bottom nip will be 4,100 lbs.

Hooker to Expand Chlor-Alkali Capacity at Niagara Falls

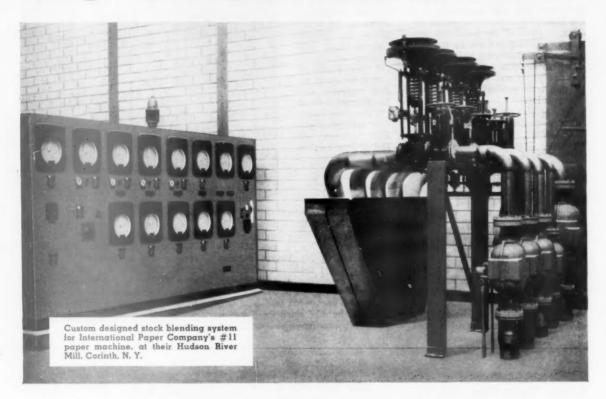
To increase production capacity of caustic soda, caustic potash and chlorine at its Niagara Falls, N.Y., plant, Hooker Chemical Corp. plans to invest about \$10-million in a new installation of Hoechst-Uhde mercury-type electrolytic cells during 1960-61, says President Thomas E. Moffitt.

This expansion is designed to meet the company's steadily increasing requirements.

Legacy of \$100,000 To Institute of Paper Chemistry

A bequest of \$100,000 has been received by The Institute of Paper Chemistry from the estate of Marion Bessie Kress for establishment of the Oscar Kress Foundation scholarship grants. Oscar Kress, her late husband, was the brother of Dr. Otto Kress, technical director of the Institute from 1929 until retirement in 1948, now a resident of Naples, Fla.

You're looking at the complete pulp stock blending system for a high speed paper machine



Foxboro Magnetic Flow Meters blend all pulp stocks accurately, continuously

Set the proportions for stocks . . . dyes . . . additives and walk away! That's the procedure for changing furnish grades on the Foxboro Stock Blending System at International Paper Company.

With this system, one man at a central panel can blend all 5 pulp stocks — as well as additives and dyes - accurately and continuously.

Each stock percentage is set on its own direct-reading dial - especially selected to meet International Paper's specific operating requirements. Settings are easier - more convenient - more accurate. And the entire system automatically adjusts for changes in machine demand, while all proportions are held exactly constant.

And since all stock measurements are made by the unique Foxboro Magnetic Flow Meter — the meter with no flow restrictions — there is nothing to plug up . . . nothing to interfere with high sustained accuracy of pulp flow measurement.

With Magnetic Flow Meters from 1/10" to 12" and larger, the Foxboro Stock Blending System will handle any number of pulp stocks, dyes, and additives. Every system is custom designed for each mill's own paper-making requirements — resulting in more consistent furnish — higher production. Your mill can benefit from this maintenance-free, space-saving system, too. Write for new engineering data sheet. The Foxboro Company, 994 Neponset Avenue, Foxboro, Mass.



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FINEST PIGMENTS FOR INDUSTRY

The Glidden Company
Chemicals – Pigments – Metals Division
Baltimore 26, Maryland

(This advertisement is printed on paper stock containing Glidden ZOPAQUE Titanium Dioxide.)



14" 300 lb. gate valve slated for a large petro-chemical plant, is being worked on one of Aloyco's battery of new Bullards.

Advanced machines... tools...test facilities expand Aloyco Valves' range of service

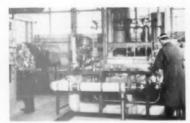
Constant change and improved techniques in modern fluid handling, pose a real challenge for valve manufacturers.

To meet these demands, Aloyco is constantly adding new facilities, some of which are pictured here.

For example, Aloyco Stainless Steel Valves are now available in sizes up to 24", pressures up to 2,500 lbs. at 650°F.

While these new facilities have improved and expanded the quality and usefulness of our entire line, they are particularly important, for example, in the manufacture of valves for the nuclear and missile fields.

For advanced knowledge and ideas plus the equipment to carry them out—take your next valve problem to the specialists: Alloy Steel Products Company, 1316 West Elizabeth Avenue, Linden, New Jersey.



One of finest hot test loops in the nation checks out valves at up to 2500 psi, 650°F. Hot tests can spot trouble that would otherwise be revealed only after months of line service.



New multimillion dollar Aloyco plant combines new production tools, test facilities, sales, administration, research and development offices and labs into single integrated unit.



Boroscope examination (in pressurized clean room) of specially made nuclear valves follows the application of dye penetrant.

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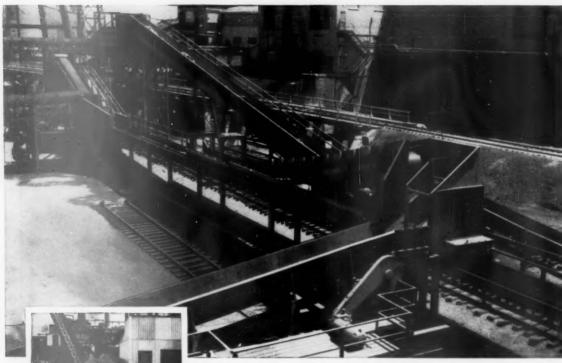
Adaptable for fast handling of sawlogs, pulpwood, and palletized materials, the versatile John Deere Loader provides great savings over hand labor or inadequate single-use equipment. Features such as high maneuverability and single-stick crawler control together with remarkable fuel economy earn a place for the John Deere Loader in pole yards and saw mills as well as at the landing. Diesel or gasoline power.

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"Specialists in Low-Cost Power with a Heavyweight Punch"



leffrey Conveying Machinery was first installed at this pulp and paper mill over ten years ago . . . and selected again for use in these recent additions to the company's facilities.

Jeffrey equipment again selected when this mill was extended

The expanded facilities of this pulp and paper mill include Jeffrey conveyors, chain, and machinery...and a lot of credit for their re-specification goes to other Jeffrey equipment installed in the original mill over ten years ago.

Wherever Jeffrey equipment is used, it establishes a solid performance record for efficient, dependable operation. Jeffrey makes a broad range of equipment for conveying, processing, power transmission...equipment that can help you operate at top efficiency. For complete information write The Jeffrey Manufacturing Company, 809 North Fourth Street, Columbus 16, Ohio.



CONVEYING • PROCESSING • MINING EQUIPMENT...
TRANSMISSION MACHINERY...CONTRACT MANUFACTURING

Jeffrey Type PW Combination Chain with S-21: spur attachment is used on this pulpwood conveyor. Service demands heavy chain with extra large surfaces to withstan wearing action of sand and grit in trough



Jeffrey Brag Type Feeders—One of a battery of feeders under chip storage bin. Chips pass through upper strand of flights to bottom plate. Lower strand carries them to discharge point over belt conveyor.



Jeffrey 36" x 36" Type 8 Wood Hog-Reduced bark and broken pulpwood sticks from barking drums.

PULP & PAPER

Pulpwood Section



KUGELMAN receives for HINMAN

WILSON

SWENNING

HUTCHINS

MacCONNACHIE receives for KELLY



McCAFFREY

BENNETT receives for EHRHART

FREEDMAN

WILSON

WHITTLE

APA Celebrates 25th Anniversary

Honors past chiefs who have helped develop American Pulpwood Assn. into single authoritative voice on pulpwood affairs

• The American Pulpwood Association, in an evening of gala celebration but at the same time serious dedication, in late February, reviewed the outstanding services its past leaders have performed for this industry and set its compass for even greater vigilance in critical days ahead.

The event was the annual dinner, which packed the Terrace Room of the Hotel Roosevelt in New York, climaxing the first Paper Week program held by APA in this hotel, removed as it is from other association activities of the big week. Handsome plaques were presented to the eight living past presidents of APA, who served terms between 1934 and 1959.

This was the first time anything like this has been done at Paper Week by any of the industry associations.

These were not only personal tributes. More important, perhaps, was the fact that the occasion was used to rededicate the APA to the important policies and goals which these former chieftains had formulated for it in fields of government, politics, public relations and industrial activity.

In its 27 years history, APA has been in the thick of some of the most important industrial and national issues, involving present and future problems of forest conservation and use.

Past Presidents

John H. Hinman (1934-36) . . . now chairman of the board, International Paper Co.

Karl A. Swenning (1941-44) . . . director of timberlands, Scott Paper Co.

Curtis M. Hutchins (1946-48) . . . president, St. Croix Paper Co.

Frank A. Kelly (1948-50) . . . retired, ex-vice president, The Northwest Paper Co.

Col. Joseph E. McCaffrey (1950-52) . . . vice president, International Paper Co.

Ed O. Ehrhart (1952-54) . . . retired, ex-president, Armstrong Forest Co. (N.Y. & Penn Co.).

Louis J. Freedman (1954-56) . . . retired, ex-timberlands and procurement executive, Penobscot Chemical Fibre Co.

Lucian A. Whittle (1956-58) . . . woodlands division manager, Brunswick Pulp and Paper Co.

Tributes also were made to the second and fourth presidents, now deceased.—R. H. Spessard, the only pro-

... APA HONORS

ducer-member to head APA, and T. W. Fernald, formerly with The Mead Corp.

The present APA chief, George B. Amidon, woodlands manager for Minnesota & Ontario Paper Co., presided. Master of ceremonies was Albert W Wilson, editor of PULP & PAPER and PULP & PAPER INTERNA-TIONAL, who presented the plaques. In introducing Mr. Wilson, Mr. Amidon noted PULP & PAPER has published a special PULPWOOD SEC-TION regularly for some 15 years in recognition of the great importance of forestry and pulpwood production to the overall welfare and future success of the pulp and paper industry, and also has cooperated closely with APA for similar reasons.

Industry's Big Opportunity

In his introductory remarks, Mr. Wilson praised APA for its many services to the whole industry and said that pulp and paper's greatest opportunities for scientific advances, cost reduction and improved operations for the next decade, and maybe longer, will lie "between the tree and the mill." Pulp and paper top management looks to pulpwood producers and foresters to make the most significant contributions in the 60's, in cutting costs, preserving industry's vital resources and improvement

He recalled that the first meeting of APA was called Jan. 30, 1934, by Stuart B. Copeland, retired head of The Northwest Paper Co., who then was chairman of the Paper Industry Authority under the National Recovery Act. That first APA group, Mr. Wilson said, fought the New Deal edict which would have "forced the pulp and paper industry to operate under the same code as the lumber industry." The first code would have forced this industry to observe minimum wages by regions, a practice illegal before and since.

Mr. Wilson recalled that "a courageous chicken dealer, fighting his way to the Supreme Court, proved the industry codes unconstitutional and this crisis proved the value and unique advantages of an organization APA." Again in World War II and the Korean War, APA earned its spurs, he said. He reminded members that early in World War II the government shut off supply of logs to three big pulp mills, forcing permanent shutdowns, and irretrievable loss of woodsmen and crews to shipyards or the army for the duration of the war. With strong industry associations and recognition of the wartime essential nature of pulp and paper this is unlikely to ever happen again, he said.

In the 27-year lifetime of APA, he noted, U. S. pulpwood consumption has increased from 5 million to nearly 39 million cords annually.

He recalled APA had three acting secretaries in its first year, the late Charles Boyce, Bob Canfield, now serving the Printing Paper Assn., and the late H. E. Brinckerhoff, the latter carrying on many years until he retired and was succeeded by W. S. Bromley, presently executive secretary. Today, Mr. Wilson said, APA's staff under Mr. Bromley totals 20 persons, its budget has grown to over \$200,000 and its mailing list from 50 to over 1500.

Tributes to Past Presidents

Beginning his tributes to the past presidents, Mr. Wilson noted that John Hinman presented his first APA annual report in Feb. 1935. He has never worked for any company except I.P., starting as woods manager of a subsidiary in 1913.

"In the days of the depression when great pressures were on the industry, Mr. Hinman, with Howard Beedy and Charles Luke, formed APA to provide a single authoritative voice for the pulpwood industry," said Mr. Wilson, Mr. Hinman, being in Florida during Paper Week, received his plaque through Larry Kugelman of IP.

In the presentation to Karl Swenning of Scott, his expert services in legislative problems were extolled, in a period when APA "proved its worth many times in trials by fire in the nation's capital."

Post-War Presidents

Next came Curtis Hutchins, and Mr. Wilson recalled that "he and Jimmy Madden, now vice president of Scott, had performed extremely important services in wartime in touring the country to get out much-needed militarily-essential pulpwood production." He recalled that Mr. Hutchins, chairman of the Dead River Co., which he headed many years in the pulpwood field in Maine, is also chairman of the Bangor & Aroostock Railroad and president of St. Croix Paper Co.

Because Frank Kelly of Northwest Paper is retired and was in California at the Winter Olympics in Squaw Valley, his plaque was received by his successor as general manager of logging operations for Northwest, William MacConnachie. Mr. Kelley's services in the War Production Board and valued leadership in the industry were mentioned.

Then Colonel McCaffery, army vet-

eran of two wars, whose many years in pulpwood production in the South ranged from logging engineer and supt. and manager for a lumber firm, up through the ranks in I.P. to be its v.p. in charge of woods operations, was called forth for his plaque. He led APA in difficult years of the Korean war.

Ed Ehrhart's plaque was received for him by Art Bennett, since Ed's plane from Florida did not get off in time. Mr. Ehrhart, now retired, worked in the woods all over U.S.A. and Canada. Finally as head of Armstrong Forest Co., his activities ranged from Ontario to Labrador and Florida to Texas. Pioneering in pulpwooding was especially mentioned.

Next was Louie Freedman, who spent 37 years in the timberland and procurement subsidiaries of Penobscot Chemical Fibre Co., contributing to fire protection and forest programs and development for New England in many ways.

Lucian Whittle, Brunswick-born and honor student from the U. of Georgia, was described as "a pioneer in new techniques of wood harvesting and wood handling." Among Mr. Whittle's industry contributions were mentioned the pulpwood pallet, which he inaugurated in the South and is now spreading to the North his program for stabilization of procurement and year-around employment in the woods, and his first application of the now-popular continuous forest inventory system. Mr. Whittle was creator of "the factory concept of intensive land management." said Mr. Wilson.

The meeting closed as Mr. Amidon called for a rising vote of thanks to APA's past presidents.



Amidon

Bromley

Hes

APA Elects New President

D. E. Hess, vice president and general manager, The Glatfelter Pulp Wood Co., will head the American Pulpwood Assn. for 1960. He succeeds George B. Amidon, director of forest management, Minnesota & Ontario Paper Co. W. S. "Bill" Bromley is executive secretary, APA.



TD-9 Skid-Grapple

Even in muddy woods, Suwanee Longleaf's TD-9 Skid-Grapple easily picks up, carries, and eases a big payload of tree-length pulpwood onto the truck! Top grab-arm is controlled by third-valve of the hydraulic system—standard equipment of the International Dratt!

replaces TWO other rigs and FOUR helpers

-for Suwanee Longleaf, Fargo, Georgia

It took two loading machines and four helpers—for Suwanee Longleaf, Fargo, Georgia, to load pulpwood. That was before they switched to the International Drott TD-9 Skid-Grapple.

Now their "loading department" is one man on the TD-9 Skid-Grapple—and does he have it easy!

Suwanee logs "tree-length" slash and longleaf pine for pulpwood—averaging 50-foot lengths, and 900 lbs per log. The TD-9 Skid-Grapple handles three to seven logs per pass. And the outfit loads out a truck with 8½ to 9-cord loads within 30 minutes!

A big load every pass!

You simply slide the Skid-Grapple's lower prongs under the wood. Then, clamp onto the logs securely with the exclusive top grab-arm. No more one log at a time "juggling" with "end tongs" or "grabs." No more damage from "A" frame rigs banging up trucks or injuring workers.

You have the hydraulic power, the "reach," and positive safe load control to pile high onto trucks.

Separate top grab-arm control lets you spot-place each grapple-full with ease!

Compare your pulpwood or saw-log loading costs to International Drott Skid-Grapple "production-line" efficiency. Measure the advantages of streamlining your logging, loading, and skid-road building with the same basic outfit. See how exclusive shock-swallowing Hydro-Spring protects performance. See your International Drott Distributor for a demonstration of the size of Skid-Grapple you need!

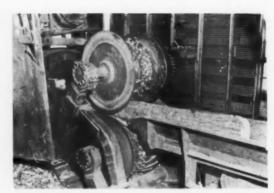


International Harvester Company, Chicago 1, Illinois Drott Manufacturing Corp., Milwaukee 15, Wisconsin

INTERNATIONAL.



FARM TRUCK IS UNLOADED at the Bagley concentration yard by one of two Pettibone Cary-Lifts, each with capacity of more than a cord.



SOON-TO-BE-REPLACED Impco debarker (infeed end), which has handled more than 200,000 cords pulpwood.

200 Cords Per Day in Minnesota

... for Waldorf-Hoerner Paper Products on a 24-hour, seven-day week basis. Aspen feeds this big operation

 Peeled pulpwood on an aroundthe-clock basis is the story of Bagley Merchantile Barker Co. This subsidiary of recently-formed Waldorf-Hoerner Paper Products Co. feeds the needs of the big paper producer at the rate of 45 cars per week. (See exclusive report on Waldorf-Hoerner's new mill in Missoula, Montana, in March PULP & PAPER.)

The 100-in. wood is all aspen (or "popple" as it is called in this part of the country). About 80 cords of rough wood are handled on each seven-hour shift—the equivalent of some 71 peeled cords.

Heart of the big concentration yard

is the Impco debarker, which is housed in a corrugated steel over-frame building measuring 25 by 100 ft. The debarker can handle wood up to 18 in. in dia. and at a rate of 136 lin. ft. per min. in high gear. This was the first debarker of its kind in the area. The machine has handled more than 200,000 cords, and is soon to be replaced by a new model now on order. Operators say it works equally well under all conditions, including 30° below zero.

At the time these photos were taken, the yard was storing about 20,000 cords of peeled wood. All the wood at the yard is stored in three

sorts-100% clean wood; wood with some bark remaining, and rough wood still to be debarked. The yard has handled as much as 636 cords in a single day. As most of this is brought in by farm trucks, the figure reaches a minimum of around 150 cords a day during harvest time.

Handling the round wood in the yard are two Pettibone Cary-Lifts. Each machine can pick up more than a cord in a hydraulic grapple. One of these units is used for piling and loading rail cars, the other to unload trucks, feed the in-going log deck and carry peeled logs away. Bark is belt conveyed into dump truck.



"CLEAN" LOGS emerge from debarking unit, powered by a 30-hp Fairbanks-Morse motor. Debarker is heart of huge concentration yard operated by subsidiary of Waldorf-Hoerner Paper Products.

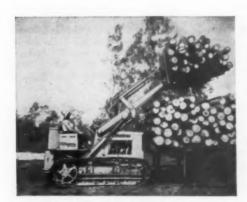


ACTIVE AT BOTH ENDS OF OPERATION, the Cary-Lift here grabs a healthy bite of peeled pulpwood as it feeds from debarker building. Railroad cars are loaded at rate of 45 cars per week.



Plant for tomorrow or push production today with an all-new

today with an all-new OLIVER OC-9 TRANS MATIC



All-new OC-96 loader, with low-profile design, can be equipped with a variety of profit-making attachments. Has 1-yd. bucket; also works with logging fork, winch, etc. Unatched for speed and operating advantages. Has all the same great features of the new Trans-O-Matic OC-9.

Unlimited job versatility is yours in the all-new Oliver OC-9! Big enough to handle husky woods work, yet the right size for jobs such as reforestation, the OC-9 is powered to handle both pushing and pulling over any terrain. That's why you can do any pulpwood job better and faster with this versatile tractor.

Here's the world's easiest handling crawler. It's all power—with both power shifting and power steering. Trans-O-Matic transmission gives you maneuverability you've never known before. Three types of turns—spot, gradual and counter-rotation—speed and ease every job in the woods.

Prove to yourself how daily production bonuses can be yours with the only totally new tractor its size in the industry. See your Oliver distributor for complete details.

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PULP & PAPER

Pulpwood Section



PORTABLE OPERATION converts tree-length lodgepole pine into chips for transport to Oregon Fibre Products board plant. Subsequent to taking photos—in .1955 by PULP & PAPER—in-woods chipping was discontinued, the board plant acquired by U.S. Gypsum Co.



RUBBER TIRE TRACTOR transports turn of tree-length stems from woods directly to portable chipping operation.

Wood Handling, Chip Production

. . . improved in West with a variety of new methods being developed

• To keep individual pulp mills efficiency supplied with chips is not a simple problem. Handling systems vary from plant to plant, the selection dependent on various non-stabilized factors. These include size and species of wood, length and type of hauls, availability of suitable

wood residues, storage facilities and other considerations. Several wood-handling methods used by industry on the West Coast were considered by the Western Technical Committee of American Pulpwood Assn. at its recent winter meeting in Spokane, Wash.

Chipping in the Woods

Chipping lodgepole pine in the woods—a project involving the first commercial harvesting of this species for pulp in Eastern Oregon—was reported by A. W. Moltke. In 1955, when this pioneering project was underway, Mr. Moltke was vice pres. of Oregon Fibre Products Co. which was then operating a newly built softboard-hardboard plant at Pilot Rock, Ore. Then, as now, he was an executive of Pilot Rock Lumber Co.

This project involved skidding treelength stems (about 9 per turn) by crawler tractor from the woods directly to a portable chipper. A small crane placed the stems on gravity side-delivery rolls leading to a conveyor feeding them butt-first to the chipper at rates up to 200 lfpm.

The chipper, driven by a 300 hp. supercharged diesel engine, functioned at sustained speed while chipping stems up to about 9 in. diam. but was slowed somewhat while

making cuts of 9 to 14 in. Maximum output per 8 hr. day ranged up to 150-160 units.

The resultant chips were delivered by conveyor belt and feed spout directly into 11-unit semi-trailers for transport to the mill. A fleet of four semi-trailers and two diesel-powered tractors were used to handle output of this in-woods chipper located 20 to 30 miles from the mill.

Weight to Foot Measure

How wood is supplied to Rayonier's sulfite mill at Hoquiam, Wash. was described by E. W. Simonton, mgr. of log sales & purchases dept., Northwest timber div. of Rayonier Inc. Hemlock is the primary species here but utilization includes some white fir and a small amount of spruce and alder. Consumption during a typical month includes 6,500 M ft. of long logs, 1,500 M of random-length pulpwood (minimum

length 12 ft.) and 3,700 M ft. in chip form.

This mill operates chiefly on oldgrowth timber. Most of the smaller wood (down to 4 in. diam. x 4 ft. long) goes to a local sawmill for barking, chipping. Rayonier buys the resultant chips.

The volumes of log loads arriving at the plant is determined via weight basis. All of the original loads coming from a given area are both weighed and scaled as a means of developing an appropriate weight-to-foot conversion factor. Subsequently all loads are weighed and one out of 10 scaled as a conversion check.

Camp-run logs passing through the plant's booming grounds are segregated, the high-grade logs are removed and sold or traded to veneer manufacturers.

Random-length pulpwood (maximum 18 in. diam. at large end, 6 in. minimum at top) goes either directly to a conveyor leading to the mill or banded for in-water storage.

Chips are purchased nearby,





DISPOSING OF SLASH with crane-fed, trailer-mounted, tractor-pulled, diesel-powered experimental chipper designed and operated by USFS. This operation reduces fire risk, adds humus to forest floor, may offer means of commercially utilizing "non-merchantable" stems.

For Chipping Right-of-Way Debris

Another type of pioneering in portable chipping—which may be a potential source of pulp chips—is being carried on by U.S. Forest Service. The prime objective of this project is to improve methods of disposing of slash and unmerchantable timber removed from rights-of-way, according to Verne V. Church, USFS engineering div., Portland, Ore.

His organization designed a large, portable chipper; had it built and is operating it on a prove-out basis in the Deschutes National Forest. This unit has a 20-knife inverted chipping cone large enough for handling 20in. diam. cull stems. It's mounted on a semi-trailer and powered by 300 hp. supercharged diesel engine.

Chips produced by this traveling "disposal" are blown (by a 48 in. diam. fan powered by 160 hp. diesel) 50 to 100 ft., clear of the right-of-way. In normal lodgepole pine stands this results in spreading a 4 to 8-in. layer of chips. Mr. Church says "these chips are not considered a fire hazard and, in time, as they deteriorate will

add humus to the soil. If needed they may be stockpiled and used for mulch on cut-and-fill slopes."

Calculations for this experimental project (computed without including depreciation charges) indicate a cost of \$0.104/cu. ft. for chips produced; \$0.061/cu. ft. for chipping only. Chipping rates range from 50 lfpm for 16 in. diam. stems to 150 lfpm for 8 in. diameters.

As to making chips for commercial use, Mr. Church reported "the blower could be adapted for loading trucks. To secure cleaner chips, the material could be limbed and skidded to central locations."

a central chipping operation especially for processing clean by-product wood obtained from sawmills and veneer plants.

Use of a skeleton-bed truck for hauling 8 ft. wood has been found particularly beneficial. Mr. Forristall

Pulpwood Acquired in Various Forms

Raw-product wood for St. Regis Paper Co.'s kraft center at Tacoma, Wash. includes long logs, 8 ft. logs, 4 ft. peeler cores, and chips. This plant, according to F. F. Forristall, St. Regis forester, inaugurated its chip procurement program in 1949 and-during that same year-installed





LOW-COST SKELETON TRUCKBED delivering pulpwood to St. Regis Paper Co. kraft center at Tacoma, Wash. facilities hauling full legal pay load and rapid unloading by tractor grapple.

PULP & PAPER

Pulpwood Section

reported this arrangement has the dual advantage of (1) allowing hauling full load-volume capacity and still comply with highway gross-weight limitations, and (2) the load can be more readily unloaded by tractor grabs and crane clams than from conventional truckbeds. Besides, only small capital investment is required for the truck owner to equip his vehicle with a skeleton bed.

Tree-Length Logging

Potlatch Forests Inc. carries on tree-length logging under conditions characteristic only of that organization. According to George H. Rauch, vice pres. in charge of lands and logging, trees are skidded tree-length to the landing and there segregated. However PFI's paperboard plant

operates chiefly on chipped residue wood. It draws from the company's adjacent plant facilities, including a large saw-mill, veneer mill and plywood plant, and from several other mills within a 200-mile radius of Lewston, Ida.

Lewston, Ida.

Actually no prime chipping takes place at the pulp mill site. Even the pulp logs are chipped at the sawmill and the resultant chips transported to the pulp mill by belt conveyor.

Chips For Market and In-Plant Use

How the Red Bluff, Calif., plant of Diamond National Corp. handles chips was reported by Chief Forester R. D. Roseberry. This modern, integrated plant center—consisting of sawmill of 90 million bd. ft./yr. capacity, pulp mill and molded-pulp plant—

converts its wood residues into pulp chips. The amount produced is greater than the quantity consumed by the plant's 75-ton pulp mill. Hence Red Bluff has chips for sale.

The main chip-handling facilities consist of a high-pressure Rader Pneumatics 10 in, line system delivering (1) to outside chip storage adjacent to the pulp mill, (2) to a rail-car loading station, and (3) to the fuel pile at the power plant for emer-gency chip disposal. The flow of chips can be diverted to any of these points by in-line valves. Production settings are confined to the delivery of chips directly to pulp-mill storage pile or, for market chips, to the loading station where the chips discharge directly into rail cars. The set-up provides for compaction loading through either side or open tops of cars. An automatic electric-eye car mover transports the receiving car back and forth for level loading.

Chip-Handling for Small Mill

Appropriately designed and engineered chip-handling facilities yield multiple benefit to pulp mills which buy chips. These objectives are achieved by incorporating facilities meeting the plant's segregation, transport and storage needs and, at the same time, making it convenient for chip suppliers to make deliveries.

Such a system installed at Spaulding Pulp & Paper Co.'s 150 ton/day sulfite market pulp plant at Newberg, Ore, was discussed by S. M. Collier, vice pres.-mgr. of the firm. Small quantities of chips have been purchased here for several years. By installing a modern receiving-handling system, the organization effectively

expanded its wood supply by (1) making for quicker turn-around for truck-trailers and (2) providing facilities for receiving chips by rail car. Previously all purchased chips arrived via truck or trailer. The new facilities provide for species segregation, outside storage and improved woodroom production scheduling.

The system has two receiving pits—one for truck-hauled chips only, the other for either highway or rail transported chips. This two-pit provision for unloading trucked chips makes for faster turn-around and extends the system's capabilities for keeping species segregated.

Chips from each pit are conveyed

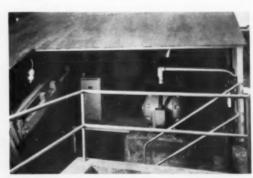
to an inclined conveyor (equipped with herringbone type belt) delivering to feeder of a Rader Pneumatics high-pressure transport system. The main flow is from the feeder to screen room 600 ft. away. By means of a 4-way valve in this 12 in. diam. line, the flow can be diverted to the plant's recently installed outside storage area. This is a 150,000 sq. ft. blacktopped site with segregated storage for 12,000 units of hemlock chips and 6,000 units of spruce and white fir.

According to Mr. Collier, the transport system has rated capacity of 35 tons per hour to the screen room or 50 tons per hour to open storage.

Recovery of stored chips involves bulldozing them into one of the pits for re-entry into the transport system and delivery to the screen room.

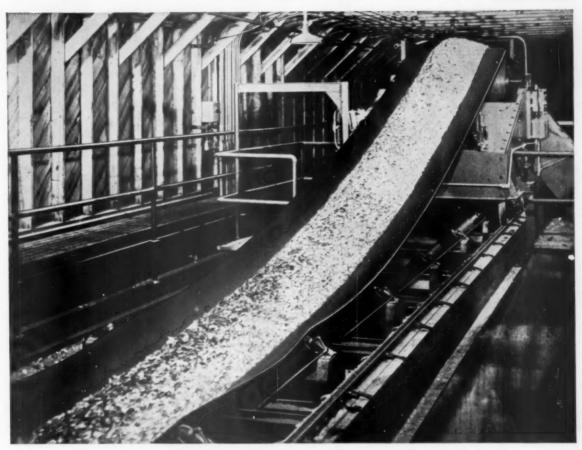


MODERN INSTALLATION improves Spaulding Pulp & Paper Co.'s chip-purchase program by speeding unloading, accommodating highway & rail hauls, providing outside storage, and keeping species segregated. At left car is in unloading position over combination rail-truck pit.



Second pit, to left of steel upright, is for truck-trailer chips. At right Rader Pneumatics transport system receives chips from both pits via inclined herringbone belt conveyor (left) equipped with RP metal detector which protects entire transport system.





Performance at St. Regis

explains why U.S. Rubber is world's largest maker of belts

In the Jacksonville, Fla., plant of the St. Regis Paper Co., chips keep moving right ahead on U. S. Rubber Conveyor Belts. The "U. S." Belt shown is one of several 48"-wide belts with 45-degree troughing idlers. Note the troughability and elimination of spillage. The belts of Paracril® construction, a U. S. Rubber exclusive, are not affected by the destructive resins of pine wood chips. They are among many belts in this extensive conveyor system, producing 350,000 tons of kraft products a year.

The St. Regis Paper Co. depends on "U. S." Belts, because of their proven dependability, and trouble-free long service life. It is this type of performance and use of "U. S." conveyor belts throughout industry that explains why U. S. Rubber is the world's largest manufacturer of belts.

When you think of rubber, think of your "U. S." Distributor. He's your best on-the-spot source of technical aid, quick delivery and quality industrial rubber products.



Mechanical Goods Division

United States Rubber

WORLD'S LARGEST MANUFACTURER OF INDUSTRIAL RUBBER PRODUCTS

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PULP & PAPER

Pulpwood Section





LIKE A GIGANTIC HORSESHOE, St. Marys woodyard winds out behind the Georgia mill. Its plentiful wood supply is augmented by chips purchased from sawmills in 50-mile radius which are unloaded by pneumatic lifter at right.

Horseshoe-Shaped Woodyard

... at St. Mary's Kraft Corp. features 2,400 ft. long concrete flume which feeds logs from storage to woodroom

• Sitting in the heart of one of the South's most productive pulpwood areas, St. Marys Kraft draws its wood

from nearly 200,000 acres of its own woodlands and from sawmills and tree farms in the area. St. Marys is

capable of using pulpwood from its own timber limits, from local farmers, and chips from local sawmills.



DUMPING from Murray Barkers logs are carried by chain to selector deck and then to one of two 96 in., 12 knife chippers.

Woodyard Section

The most unique aspect of St. Marys wood handling is the layout of the woodyard, which winds out to the West of the mill like an enormous horseshoe. This horseshoe clearly defines the limits of the woodyard and keeps St. Marys large pulpwood inventory handy and easily accessible to the mill. St. Marys Railroad runs through the heart of the woodyard.

Surrounding this woodyard at St. Marys is a 2,400 ft. long concrete flume, the longest pulpwood water conveyor in any Southern mill. One of the seven deep artesian wells supplies all of the 30,000 gallons per minute required to operate this wind-



LIFTING HEFTY LOAD OF LOGS diesel crane swings out over 2,400 ft. flume. Lorain rake is used to empty rack cars and trucks.



BUSINESS END of big flume empties into extra-wide chain conveyor with three separate strands for lifting logs. Link-Belt screens keep water clean.

ing flume. Its total water capacity is 180,000 gallons. The grit chamber is equipped with Link-Belt screens, grit collectors, sprays, and other necessary equipment to remove and convey bark from the flume and the barking drums to the bark boilers. This woodyard is fully automated.

Logs are unloaded from cars or trucks by cranes and dropped into the flume. Logs are then lifted from the flume on a heavy duty conveyor, using three separate strands of C-132 chains. They are then delivered to three 12 ft. by 67½ ft. 3-section Murray barkers. Adjacent to the backing drums is a boiler for burning bark from these drums. The barked logs dump onto heavy duty conveyors and are fed to two 96" 10-knife Murray chippers.

The chippers are driven by 800 hp synchronous motors with a 200% pullout, and a speed of 400 rpm. The chips are screened by six No. 20 Rotex screens. Sawdust is removed by gravity. Three Lombard chip crushers handle rejects, and a Dings magnetic and self-cleaning rectangular magnet removes any extraneous metal.

Chips are carried on rubber belts to three tile silos with a total storage capacity of 113,000 cu. ft. These silos also receive purchased chips. Link-Belt equipment handles up to 16,000 cu. ft. of chips an hour.



Carthage-Norman Chippers Give You Greater Yield of Higher Strength Pulp

With its unique helicoidal disc segments and variable-bevel knives, the Carthage-Norman Chipper produces the highest percentage of "to size" chips. There are fewer compressed or bruised chips and ½% to 1% less sawdust—a feature which can pay for the chipper in one year. Knives wear longer—cost less. Heavy-duty construction results in exceptionally low maintenance costs.

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The Chesapeake Supply & Equipment Co. Forest and Railroad Ave. Dover, Del. REdfield 4-5991

APA Studies Better Growing And Harvesting Techniques

 The American Pulpwood Association continues its assault on the big woods problems: Growing more trees and getting them out of the woods cheaper and better.

In addition to its commentprovoking meeting on the international aspects of the Noralyn hardwood pulping process, the APA focused its scrutiny on these major problems: Pulpwood logging, conservation, recreation, fire protection, safety forest management and woodlands research

Harold G. Wilm, commissioner of New York's conservation department, praised the forest industry for its continuing efforts to provide recreational facilities for the public, emphasizing the fact that the public demand for outdoor recreation is growing at an amazing rate. Mr. Wilm also described how New York's conservation department administers more than three million acres of public land in New York State.



POUNDING HOME POINT, APA luncheon speaker ROBERT J. GIDEL, chief of div. of safety standards and services, Dept. of Labor, punctuated his talk with rare and tasty humor. "People must want safety," he said, "it must be natural—like watching the late show on television."

A Georgian called on American businessmen to take an active interest in the building and maintaining of adequate forest fire control programs. N. E. Ruark, director of the Georgia Forest Research Council in Macon, Ga., pointed out that fires increase the cost of products and these costs must be kept down if salesmen are to meet their competitors on an even basis.

Latest and most efficient logging methods in various U.S. forest regions were also carefully considered. The director of technical forestry for Owens-Illinois Glass Co., Jacksonville, Fla., George Abel, was moderator of a six man panel which studied these methods. Its members: R. F. Bower, Hammermill Paper Co., representing the Appalachian region; F. N. Fixmer, Mosinee Paper Mills, Lake States region; G. A. Pesez, International Paper Co., northeastern region; H. H. Flickinger, International Paper Co., Southeastern area; S. K. Hudson, Container Corp. of America, southwestern area and R. L. DeLong, St. Regis Paper Co., western region.

Topping off the logging discussion was Dr. L. J. Lussier, research director of the Quebec North Shore Paper Co., Quebec, Canada. He predicted scientists and mathematicians will soon be playing important roles in logging if the forest industry is expected to meet competition.

The full text of all the papers of the annual meeting of the American Pulpwood Association will be printed exclusively in the 1960 PULPWOOD ANNUAL issued in May.



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Talladega, Alabama

Total investment required less than \$25,000—set up and operating.

Will prove profitable in mills producing as low as 7000 bft per day.

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Winders • Petit Winders • Supercalenders • Roll Wrappers • Roll Lowering Tables • Roll and Shaft Handling Equipment • Slitters • Conveyors • Unwind Stands and Tru-Tension Control • and other equipment for the paper and allied industries.



BELOIT EASTERN CORPORATION

DOWNINGTOWN, PENNSYLVANIA

PULP & PAPER

Strictly Personal

Northeast

Roger Wiewel, sales representative for Weyerhaeuser Timber Co., Pulp Division, in the Northeast, working out of Clinton, Mass., has finally succumbed and his bachelor days are numbered. Roger is engaged to marry Miss Joan Reed, of New York City. A Pennsylvanian, Roger went to work in engineering and mill operations in the West before entering pulp sales.

Martin Luther Haggerty, executive vice president of George La Monte & Son, died January 10. During his 56 years with the company, he was responsible for major merchandising programs that expanded the use of safety paper for bank checks.

Stuart E. McKay, vice president and a director of International Paper Co., has been named director of research with responsibility for all IP research programs. . . . George H. Rand, asst. to Mr. McKay, becomes manager of manufacturing of IP's Northern division.

John H. Feck succeeds John X. "Jack" Coppens as superintendent of Fraser Paper Ltd.'s groundwood specialty paper mill at Madawaska, Maine, Holland-born Mr. Coppens, who is retiring, first worked with Kimberly-Clark Corp. at Kimberly, Wis., Niagara Falls, N.Y., International Paper Co., Niagara Falls, and Beaverwood Fibre Co., Thorold, Ont. He joined Fraser in 1928. Mr. Feck has been with Champion Paper & Fibre Co., International Paper, Oregon Pulp and Paper Co., and Mead Corp. He was with Fraser a year before going to Provincial Paper, returned to Fraser for a year, then went to Port Alfred Pulp & Paper and returned to Fraser for the third time in 1930.

Thomas J. Stiles, general supt. of Brown Co.'s Cascade mill, has been promoted to manager of paper manufacturing, succeeding Frederick E. Macy who has resigned.

Jerome D. Post is now marketing research mgr., Latex Fiber Industries, Inc., subsidiary of U.S. Rubber Co., jointly operated with J. P. Lewis Co. . . . Paul Goldner, sales engineer, J. O. Ross Engineering, recently visited 30 pulp and paper mills in Mexico. He reports a tremendous rate of expansion, says 75% to 80% of the mills are putting in new machines.



First Man and First Lady
Of TAPPI—Lientz Re-Elected

James R. Lientz, vice-president, production, Union Bag-Camp Mfg. Co., now in his second one-year term as president of TAPPI, is shown with Mrs. Lientz in photo by PULP & PAPER. They reside in Savannah, Ga., where Jim Lientz has spent his entire career since earning his master's and b.s. in chem, eng. at the University of Michigan, except for two periods with Swenson Evaporator Co. (1937-40-before joining Union, and 1942-46). He first joined Union in 1940, as asst. chief chemist. He came back in 1946 as tech, dept. supt., and rose to top managerial posts.

Another important change this year in TAPPI-Phil E. Nethercut has become executive secretary and Ronald G. Macdonald new serves as treasurer.

A. P. Schnyder Celebrates 35 Years in Industry

To help him honor his 35th year in the pulp and paper industry, Mr. Schnyder, consulting engineer of the newly established pulp and paper div., The Lummus Co., invited a few friends to a luncheon at the Canadian Club in New York.

He entered the pulp and paper industry in 1925 with George F. Hardy, the late leading consulting engineer, worked on the design of 7 Canadian newsprint mills with a total of 17 machines, later designed 5 integrated southern mills including the first newsprint mill at Lufkin, Texas and the start of the world's biggest mill at Savannah.

After Mr. Hardy's death, Mr. Schnyder joined Ebasco Services in 1948, designed the first newsprint mill in India, the dissolving pulp mill at Jesup, Ga., and a foodboard mill at Brewton, Ala.



Seated from left are H. C. Brown, director, Chicago Bridge & Iron Co.; F. J. Mc-Govern, The Lummus Co.; C. J. Faulkner, pur. agt., Gilman Paper Co. and St. Marys Kraft Corp.; R. E. Grigg, industry representative, General Electric Co.; W. W. Cronkhite, retired Ceneral Electric Co., Mgr. Industry Division; A. P. Schnyder, The Lummus Co.; R. M. Dickson, pulp & paper mill engineer, Ebasco Services, Inc. Formerly with G. F. Hardy since 1924; Dr. R. G. MacDonald, asst. to president and former secretary of TAPPI; D. Breien and W. W. Kraft, The Lummus Co. Standing from left are W. J. Hemphill, Singmaster & Breyer; A. D. Halporn, consulting sales engineer, Combustion Engineering; M. Castagne, Pulp & Paper.



Gunnar Gräfstrom, Stora's Sales Director, Visits U.S.A.

Mr. Gräfstrom and his wife, Lies, were visitors in the U.S. during Paper Week meetings in New York, along with several others from Stora Kopparbergs Berglags AB. Mr. Gräfstrom, who heads pulp and papers sales for Stora, makes his headquarters in Falum, Sweden. He was accompanied at Paper Week events by Karl Clauson, president of Stora Kopparberg Corp., N.Y.

Earl C. Smith has joined Porject Fabrication Corp. as coordinator to industry. His previous associations have been with Vitro Engineering Corp. and M. W. Kellogg Co. Patrick J. Reilly steps up as director of labor relations for Brown Co. succeeding Alfred B. Clark, who has resigned. Thomas J. Stiles succeeds Frederick E. Macy, who has resigned, as manager of paper mfg. for Brown. . . . Charles F. Baker, supt. of converting, No. 3 paper machine and cores depts., St. Regis Paper Co's. Bucksport, Maine mill has retired but continues until August as consultant. Burton Craig succeeds him, and Robert F. Redman moves up as asst. supt.

John E. Smet is now asst. district mgr. of Elliott Co's. New York office. . . .

Robert R. Peck has been promoted to technical asst., pulping, Oxford Paper Co., working with Howard P. Waldenmyer, asst. mill mgr., pulp, on pulping problems. . . . Frank E. Chapman and Harry Farrell have retired from International Paper Co. with longest service records of any IP employe. Both joined IP in 1898. Mr. Chapman spent many years as mill agent at several IP mills and has been in the New York purchasing dept. since 1927. Mr. Farrell spent his entire career in the New York office in sales, secretary's dept., engineering and core and wrapper dept.



Karl M. Guest in New Post for Brown Co.

He becomes mgr. of kraft pulp and paper manufacturing for the Berlin, N.H. firm. Mr. Guest was formerly asst. mgr. of pulp manufacturing and was at one time associated with Union Bag & Paper Corp., National Container Corp. and Gulf States Paper Corp.

He will have charge of all operations at the kraft pulp mill and bleachery, in addition to general supervision of the Cascade and Riverside paper mills.



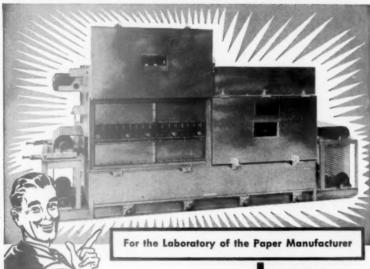
William D. Hurlbut Heads American Paper Exports

He replaces Irving C. Baldwin, who has retired. Mr. Hurlbut is the son of the late William N. Hurlbut, for many years vice pres. and a director of International Paper Co. The new Apex president joined the firm in 1956 following several assignments with International Paper sales divisions, was named a vice pres. in 1957 and exec. vice pres. in 1959.

Robert W. Hisey has been promoted to chief engineer, Cumberland Mills, S. D. Warren Co. Howard W. Stevens continues as plant engineer and Alfred A. Mann succeeds Mr. Hisey as technical service director. . . Thomas I. Meehan steps up from asst. resident mgr. at Crown Zellerbach's Carthage, N.Y. mill to resident manager succeeding William E. Parkinson who moves as asst. manager to St. Francisville Paper Co. in Louisiana.

John Lewis, former head of the paper engineering dept., Lowell Technological Institute, has joined the Pulp & Paper Research Center, Inc. at Lawrence, Mass., as technical director. . . . David





- widens the scope of your pilot operation.
- makes initial runs to test market.
- allows wide range of paper formation and finish.
- opens up new avenues for product development.
- extremely adaptable as a dry and cure unit.
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INSTALLED IN ALBERNI TWELVE YEARS AGO

EXPANDED TO FIT LARGER OPERATIONS!

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Recently the Alberni mill was greatly expanded in the size and scope of its operations-and it was a relatively simple matter to expand the COTTRELL unit to keep pace with requirements of the enlarged plant...another example of the flexibility and long investment life of this equipment.

Regardless of the nature of your gas-cleaning operations, Western Precipitation provides an un-

biased recommendation on the type of equipment best suited to your individual needs-an unbiased recommendation that saves you many thousands of dollars in installation and operating costs.

Western Precipitation is the organization that pioneered commercial application of the nowfamous COTTRELL process of electrically-cleaning industrial gases of all types. This same organization also pioneered commercial application of the multiple small-tube type of Centrifugal collector (MULTICLONE) ... and has developed greatly improved types of Filter and Scrubber equipment that offer significant advantages where these types of gas cleaning are indicated.

Whether your gas-cleaning problems involve dust, fume, mist, fly ash-or any other gasladen suspensions, wet or dry-let our engineers study your operations and make recommendations on the type of equipment best suited to your particular requirements. No other organization can match the experience - nor the wide range of equipment - Western



- MULTICLONE Mechan
- 3. CMP Combination Units
- 4. DUALAIRE Jet-Cleaned Filters
- 5. THERM-O-FLEX Hi-Temp Filters E. TURBULAIRE-DOYLE Scrubbers

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PULP & PAPER

Strictly Personal

R. Lepper, vice president i/c Stone Container Corp's. eastern division at Philadelphia, Pa., was re-elected president of the Northeast Mfrs. Assn. . . . Frank Halvonik is now director of new product development and technical sales, Monadnock Paper Mills. Inc.

Joseph H. Magruder has resigned as advertising manager of Oxford Paper Co. to join Seaman & Co. William T. Rich, sales promotion mgr., takes on duties of advertising mgr. in addition to other duties. . . . Frank H. Schmitt is now secretary, eastern div., National Paperboard Assn. and Fibre Box Assn., succeeding Ralph C. Kline who died Feb. 10. . . . Maurice A. "Bernie" Burnston has joined TAPPI's permanent headquarters staff as technical assistant.—Maurice R. Castagne.

CHIPS



John Lewis, Technical Director, Pulp & Paper Research Centre

He comes to the Lawrence, Mass. organization from Lowell Technological Institute, where he was head of the Paper Engineering dept.

The Research Centre is engaged in process and equipment research and development both for John W. Bolton & Sons Inc. (with which is is affiliated) and independently for the pulp and paper industry and its suppliers

From 1948 to 1952 Mr. Lewis was assoc, professor of chemical engineering, Pulp & Paper section, Univ. of Maine. He is chairman of New England TAPPI and vice chairman of the Chemical Engineering section in the Engineering div. of national TAPPI.

Midwest

N. W. "Nate" Putnam, who represents R. T. Vanderbilt Co. Inc., in Dayton, O., having moved there from Kalamazoo, had a hard time keeping his mind on Paper Week when he was in New York. Most important to him was keeping in touch back in Dayton where his wife was expecting a new arrival momentarily . . . and it was timed with close of the week's events.

Judson Bemis is elected president and chief exec. officer of Bemis Bro. Bag Co., replacing his brother F. G. Bemis, who becomes chairman. Replacing Judson Bemis as exec. vice pres, is C. W. Akin. R. V. Scott and B. L. Willmore become vice presidents and J. T. Braxtan asst. sec. . . . Colin Gardner III announces his resignation as a director of Diamond National Corp. (formerly Diamond Gardner Corp.). He had resigned earlier as vice pres. "because of policy differences." . Richard S. Aldrich, mgr. of public relations and advertising, becomes mgr. of marketing services for the Hinde & Dauch div. of West Virginia Pulp & Paper Co.; he replaces William F. Westerhold, who has resigned.

Ed Paulson, chief maintenance engineer for Allied Paper Corp., Kalamazoo, Mich., was to attend the President's Conference on Occupational Safety March 1-3 in Washington at the invitation of President Eisenhower. . . Charles E. Ward has been appointed sales representative

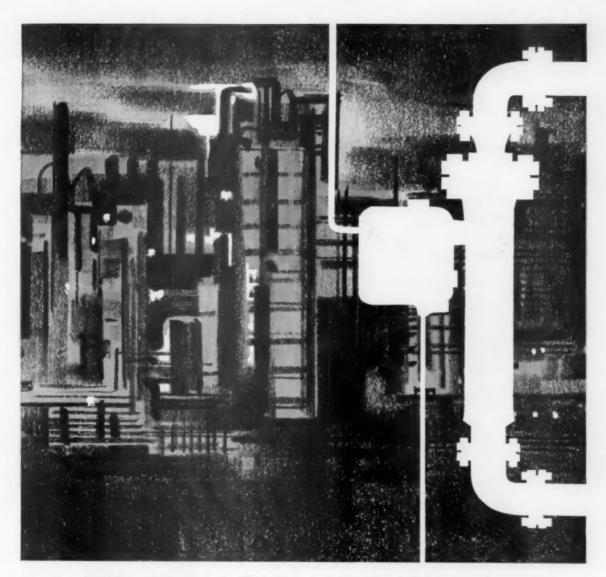
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High in sensitivity and accuracy! For full float range operation the Fisher Level-Trol is factory calibrated or zero adjusted to produce an accurate 3 to 15 psi or 6 to 30 psi signal output. Designed, engineered and universally accepted for most liquid level control, liquid level indication and interface control problems. Has simple liquid level adjustment indicating dial—combined pneumatic proportional band and specific gravity adjustment. Heavyduty built—easy to operate—simple to service. Available with cage units for external mounting or internal top or side flange mounting with float sizes from 14" to 120".

Write for Bulletin F4A for full details.



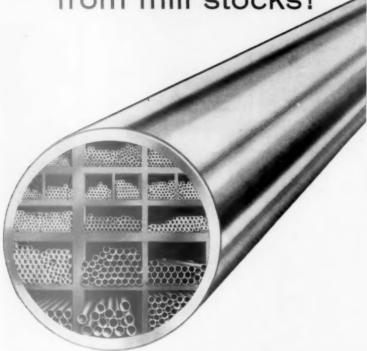
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STAINLESS HEAT EXCHANGER TUBES

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If you need other standard or special-purpose types of heat exchanger tubes, Carpenter can supply them also. Our technical staff is always available for competent assistance on any stainless tubing or pipe problem.

For prompt service on your next orders, contact your

Carpenter representative or the mill.

The Carpenter Steel Company, Alloy Tube Division, Springfield Road, Union, N. J.

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to cost-saving
corrosion control

Curpenter

Stainless Tubing & Pipe

for John W. Bolton & Sons Inc., the Emerson Mfg. Co. div., for mills in Illinois, Indiana, Kansas and Colorado. He will make his headquarters in Chicago. . . . Election of Louis F. Weyand as exec. committee vice chairman has been announced by Minnesota Mining & Mfg. Co.; J. F. Whitcomb becomes vice chairman of coated abrasives and related products.

Manuel Arevalo joins Allied Paper Corp., Kalamazoo, as staff engineer responsible for installation and maintenance of instrumentation; he was formerly instrumentation engineer for W. R. Grace Co. In another Allied announcement, Albert Vickery becomes chief electrical maintenance engineer; he was formerly with Southland Paper Mills as electrical service engineer.

Charles G. Ellington becomes president of Mid-West-Pak Corp., Belvidere, Ill. subsidiary of Champion Paper & Fibre Co.; he succeeds J. Bruce Morford, retired. Mr. Ellington for the present will retain his position as director of planning, converting products group, at Champion. Named vice pres. and gen. mgr. at Mid-West-Pak was H. Stanley Sackett, since 1958 operations vice pres.

Paul Butler, president of Butler Paper Co., Chicago, has been named a director of Nekoosa-Edwards Paper Co. . . . Appointments of Bernard G. Schneider as conveyor equipment sales mgr. and of Frank G. Stuller as chief engineer of the Conveyor & Process Equipment div. have been announced by Chain Belt Co., Milwaukee, In another appointment J. Walter Snavely becomes sales mgr. of the Milwaukee district office.







Brundige

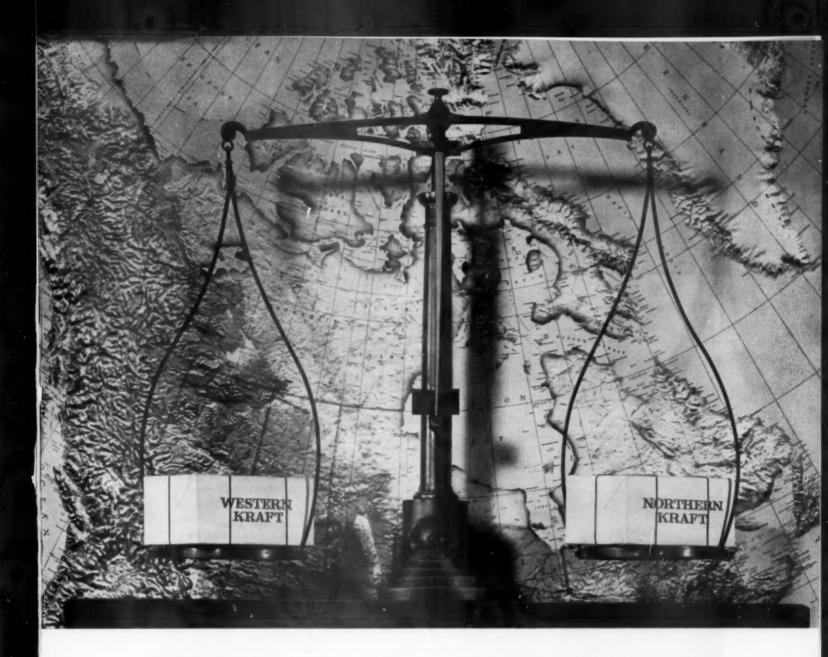
Henricks

Iones

Mead Promotes Three at Chillicothe

Three staff members are given additional responsibility by The Mead Corp.: Ernest B. Brundige, production mgr., now also heads all Chillicothe (Ohio) div. manufacturing operations; Warren E. Henricks, division engineer, becomes asst. to the division mgr., and Milton V. Jones, asst. division engineer, succeeds Mr. Henricks.

In his new assignment Mr. Brundige directs pulping, papermaking and coating operations in addition to responsibilities over finishing, which he has held since



CELGAR KRAFT HAS THE BALANCE

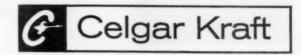
The outstanding feature of Celgar Kraft pulp will be its balance of properties.

Because of the species blend in the Southern Interior of British Columbia, the Interior pulp resembles Northern Kraft pulps in many ways. It combines the outstanding tearing resistance of the West Coast fibres with the high bursting strength of Northern krafts over a wide range of freeness and in a variety of stock preparation equipment.

With this blend of qualities, Celgar Kraft will be a premium pulp in almost any field of use.

Scheduled to go on stream early in 1961, the 500-ton Celgar mill is located on the Columbia River at Castlegar, just north of the Washington border.

columbia Pulp sales Limited has been formed to distribute Celgar Kraft pulps and Columbia Cellulose sulphite pulps. Offices are located at: 1030 West Georgia St., Vancouver 5, B.C. 1600 Dorchester St. West, Montreal 25, P.Q.



V4427-1

PULP & PAPER

Strictly Personal

A two-week flying trip took Dr. A. H. Nadelman, head of Western Michigan Univ.'s paper technology dept., to Japan between semesters. There he served as consultant to a large trading company.

Dr. John W. Ryznar, vice pres. and technical director of Nalco Chemical Co... becomes technical representative in corporate management; new director of research is Dr. William P. Hettinger Jr., formerly head of research for the Catalyst div. . . . Ted W. Palmer, technical salesman since 1957, becomes product mgr. handling synthetic flocculants for Dow Chemical Co. . . . Ralph E. Ecker-strom is new director of advertising and public relations for Container Corp. of America: he continues his present position as director of the design dept. J. Sanford Doughty, advertising mgr. since 1948, resigned.

New appointees to Allis-Chalmers Mfg. Co. Industries Group sales offices are Kenneth A. Briggs (Milwaukee) and

There's more to a Lodding Doctor

than meets the eye

Few qualifications for manufacturing

count more than experience. And

concentrated within a specialized line of endeavor it adds value to

Lodding Doctors carry that extra value derived from experience experience accumulated over thirty

years of specialization in the

manufacture of doctors, doctor blades, blade holders and their

accessories. During this period,

Lodding has built and installed

doctors for every conceivable doctoring application, under all

conditions and of every type and

size, up to and including the Great

Lakes Paper Company's 340 inch

Installations of Lodding Doctors are

found in nearly every paper mill in

this country and in many mills

manufactured for the specific roll

Doesn't it make sense to rely on specialized experience? Most mills have found that it does. Next time, get Lodding Doctors. Then you'll

abroad. Each was precision engineered and precision

newsprint machine.

being doctored.

when experience has been

the product.

James J. Dolan Jr. (Columbus, Ohio). . . . George A. Heintzemann and Prescott Fuller, long-time president and sec .treas. respectively of Dexter Co., a division of Miehle-Goss-Dexter Inc., retired February 4. They are succeeded by F. I. Walsh and William F. Lenz .- Don W. Zeigler.



John E. Watson, Technical Director at Wrenn Paper

He was formerly administrative asst, to the vice pres. at Mead Research Center, Chillicothe, Ohio. In new assignment he will be responsible for technical functions and research facilities at the Middletown subsidiary of Mead Corp.

Ed Schoenberger Dies; Dean of Students at Institute

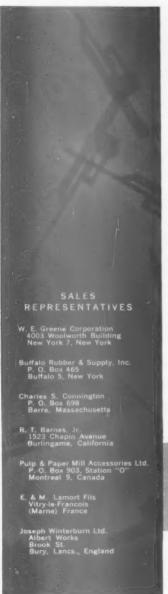
He joined the Institute of Paper Chemistry in Appleton, Wis., in 1940 as professor of speech and communication and was named dean in 1952. Mr. Schoenberger became chairman of the Dept. of General Studies in 1956 and assumed additional duties last year as curator of the Dard Hunter Paper Museum.

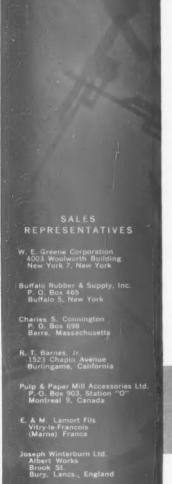
Dean Schoenberger was well known throughout the industry for his organization and programming of the annual Executive Conferences. A native of Springfield, Ohio, he did his graduate work at Northwestern Univ. and was on the faculty of Lawrence College, Appleton, prior to joining the Institute staff.

Pacific

Charles Swan, research chemist of Western Waxide packaging research & development laboratory at San Leandro, is promoted to supervisor of applied packaging development. . . . John Balls, tech. asst. to chemical engr. at Crown Z Camas Div., transfers to Western Waxide Div. as quality control supervisor at North Portland plant.

D. W. Dron, long associated with lumber plant engineering work and recently of Timberman's Engineering Co., Portland, Ore., becomes company engr. of Southwest Forest Industries Inc. to work on contemplated plant changes having to do with improved lumber production and

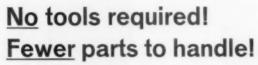






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maintenance is this quick...
this easy!



Norgren Manual-Drain Air-Line Filters can be quickly and easily disassembled to remove the filter element for cleaning. No tools are required. There are only 4 loose parts to handle, and reassembly is simple...a quick, easy job for anyone.

As a result, a Norgren manual-drain air-line filter is faster and easier to service than any other make of filter. This adds up to a big yearly saving for you in maintenance time and money.



Norgren Filters give you top performance

in removing damaging solids and liquids from an air line. Available with transparent or metal bowls. 1/4", 3/8", 1/2", 3/4", 1" pipe sizes.

For further information on the money-saving features of Norgren manual-drain air-line filters or Norgren automatic-drain air-line filters, call your nearby Norgren representative listed in your telephone directory—

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FOUNDED IN 1926 3458 SOUTH ELATI STREET ENGLEWOOD, COLORADO

Top of filter remains connected to air line.

Filter element is held on by baffle plate.

Baffle plate is easily unscrewed by hand.

Clamp ring has quick-opening spring clip.

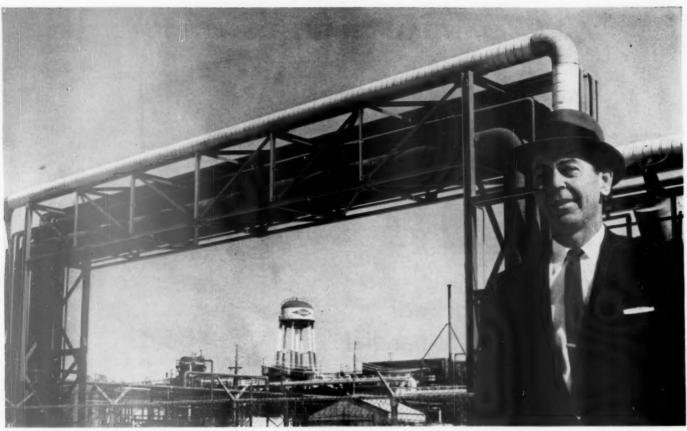


2 Filter bowl is held on by clamp ring.

Drain cock is easily turned by hand to empty liquid.

Compare Norgren with other makes of air line filters!

MAKE	NORGREN	A	В	C	D	E
Loose Parts to Disassemble	4	9	16	13	6	12
Tools Required for Maintenance	NONE	Wrench	Wrench & Screw- driver	Screw- driver	Wrench	Wrench & Pliers
Tool Operations Required	NONE	2	10	16	2	4



C. V. Harp, Houston, Texas District Office Manager, Reliance Electric and Engineering Company

"This new Duty Master goes three vital steps ahead in open motor protection.

"Right now the big story on open motors is encapsulation, for new protection against dust, dirt, acids, water and other contamination, indoors and out. The Reliance story adds something more.

"As step 1, read why Duty Master's 'thixotropic' process gives you better heat dissipation without cracking . . . in contrast to the thick, monolithic mold encapsulation now applied to other open motors. This is a definite design advance.

"As step 2, read about a new protective film coat-

ing of rotor and stator—to stop rust and 'freezing' in the air-gap. Another Reliance advantage.

"As step 3, get the story on complete shielding and water-repellent lubrication of bearings. Reliance design does the trick.

"The facts on the opposite page tell you all about Duty Master's complete open motor protection.

"You buy more than a motor when you buy this exceptional Duty Master."

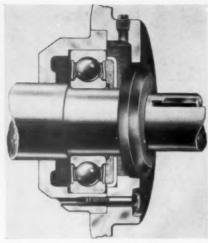
RELIANCE-



Duty Master



Duty Master encapsulated windings are not in a molded, monolithic block as many motors are. The epoxy resin is vacuum impregnated into the windings, penetrating completely and forming a solid mass following the contour of the windings at a uniform thickness of ½ inch. Better cooling results because there is no bulky mold to inhibit dissipation of heat; further the epoxy supports the expansion of copper and iron without cracking. Method provides maximum flexibility, tensile strength, bond strength and still maintains resistive strength.



Bearings are double shielded—a slinger on the outside and a moisture-resistant inner cap keeps out water and other contaminants. Bearings are also prepacked in a special lithium-base grease, which not only prevents rust, but will not wash out. Reliance's exclusive "Metermatic" lubrication system automatically meters correct amounts of grease to bearings from a large reservoir, and as the diagram shows, puts grease on both sides of the bearing.



On these applications, the air gap between stator and rotor is a highly vulnerable area... consequently we took steps to prevent problems which would impair operation of the motor. Reliance devised a protective film to coat rotor and stator laminations and to remove the possibility of rust or 'freezing.' This film stays put... water, dust, dirt, or acid won't affect it... and it marks another step in over-all open motor protection. Downtime and maintenance costs are cut.



Cast iron conduit box is threaded . . . has neoprene gasket providing a liquid-proof seal. Leads are individually held by molded pressure knobs numbered to correspond with wiring diagram. Box may be rotated to suit customer's convenience.

All motor bolts are zinc plated, hex-head . . . resist corrosion and assure positive wrench grip. Contact edges of end shields are greased to assure a completely tight seal.

Your Reliance Sales Engineer has all the details. Get in touch with him at the nearest office, or write us for Bulletin B-2108.

Product of the combined resources of Reliance Electric and Engineering Company and its Master and Reeves Divisions

RELIANCE ELECTRIC AND ENGINEERING CO.

DEPT. 184Å, CLEVELAND 17, OHIO Canadian Division: Toronto, Ontario Sales Offices and Distributors in Principal Cities



PULP & PAPER

Strictly Personal

manufacture of wood chips at the firm's Flagstaff and McNary, Ariz. sawmills.
. . . Clarence Enghouse, asst. res. mgr. of Crown Z West Linn Div., was selected by Oregon City Junior Chamber of Commerce as the area's Senior First Citizen.

Ward C. Williams, who joined Seattle office of MILLER FREEMAN PUBLICATIONS in 1952 as a regional editor of PULP & PAPER, has been appointed editor of publications for American Forest Products Industries in Washington, D.C. . . . Frank O. Anderson, member

of Simpson Paper Co. engineering dept. at Everett, Wash. since 1954, transfers to Portland, Ore. as chief engr. of Simpson Engineered Wood Products Co.

D. B. Phillips, mgr. of Longview Fibre Co.'s container operation is attending 13 wk. advanced management program at Harvard Graduate School of Business Administration in Boston, During his absence, R. E. Wertheimer, recently appointed asst. mgr. of container operations, is in charge of the company's four West Coast container plants.



Russell J. LeRoux Heads Weyerhaeuser Pulp Mfg.

Mr. LeRoux, manager of Everett, Wash. pulping operations since 1942, becomes mgr. of manufacturing, pulp-paperboard div., Weyerhaeuser Co. He suceceds Raymond E. Baker who resigned to join Southwest Forest Industries Inc. as vice pres. in charge of pulp-paper mill division. Mr. LeRoux has had a long career in managerial and top mill operations positions both in Wisconsin and in Washington State. He was with Consolidated Water Power & Paper Co., for many years, and also headed mill operations at Rhinelander Paper Co. for a time. His wife, Margaret, is also from Wisconsin. His late father was longtime mill manager for The Northwest Paper Co. at Brainerd, Minn.

John M. McEwen, technical director of Everett kraft mill, succeeds Mr. LeRoux as branch manager. Alfred Graef, tech. assistant to vice pres.-mgr. pulp-paperboard div., transfers from Everett to Tacoma to assume additional staff duties.



The user-benefits this Orr felt is providing at The Mead Corporation's board mill in Cincinnati are typical of Orr felts everywhere.

Custom engineered to your exact specifications, these quality felts assure good finish and long life on the machine, greatly reducing downtime and maintenance costs. That's why so many papermakers specify Orr.

For complete information, check with your Orr representative or write us direct.



W. Ronald Richardson, Mgr. In Seattle for Crown Z

Mr. Richardson, who joined CZ public rel. dept. in 1955 and has been mgr. of Pac. Nw. PR dept. in Portland since 1956, is to succeed Ralph D. Dickey as res. mgr. of Crown's Seattle general offices. Mr. Dickey, to retire in June after 43 yrs. with CZ, will serve the firm as a consultant.

Ralph Porter, formerly supt. of Growers Container Corp. plant at Fullerton, Cal., has been named production manager of the new corrugated board plant being built in Clendale, Ariz. by Southwest Forest Industries, Inc.



ORR FELT & BLANKET CO.

PIQUA, OHIO

Loading Tank Cars at one of our mines

... an important phase of TGS Service

This is a service of interest to the rapidly increasing number of companies preferring to receive their sulphur deliveries in molten form so that they can transfer directly from cars into consumption. We are equipped now to deliver molten sulphur by tank car from all mines and recovery plants to any place in the country. Detailed instruction sheets and drawings are available on request for those in the planning stage or who do not have adequate or proper facilities for handling and storing molten sulphur.



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Sulphur Producing Units: Newgulf, Texas • Spindletop, Texas • Moss Bluff, Texas • Fannett, Texas • Worland, Wyoming • Okotoks, Alberta, Canada



... check DISSTON Chipper Knife performance against any other kind

We'll provide the record materials free to help you compare the grinding record, cutting ability and service life, of Disston Chipper Knives, against any knife made. Hardwoods, softwoods, catfaces, and frozen logs . . . run 'em all . . . then let the record speak for itself.

We and our customers already know the answer. Disston Knives are hardened in an exclusive salt bath process that eliminates internal stresses and eliminates cracking. The result is a constant hardness and uniform grain structure. When you sharpen, you get a perfect new edge with the least amount of grinding.

For further proof, we make you this guarantee:

We'll replace any Disston Knife that cracks due to a manufacturing defect!

Prove these facts yourself, now. Send for the free record forms. Write: Disston Division, H. K. Porter Company, Inc., Philadelphia 35, Pa.



PORTER SERVES INDUSTRY: with Rubber and Friction Products—THERMOID DIVISION; Electrical Equipment—
DELTA-STAR ELECTRIC DIVISION, NATIONAL ELECTRIC DIVISION, PEERLESS ELECTRIC DIVISION; Specialty Alloys—
RIVERSIDE-ALLOY METAL DIVISION; Refractories—REFRACTORIES DIVISION; Electric Furnace Steel—CONNORS
STEEL DIVISION, VULCAN-KIDD STEEL DIVISION; Fabricated Products—COLDFORM DIVISION, DISSTON DIVISION,
FORGE AND FITTINGS DIVISION, LESCHEN WIRE ROPE DIVISION, H. PORTER COMPANY de MEXICO, S. A.; and
in Canada, Refractories, "Disston" Tools, "Federal" Wires and Cables, "Nepcoduct" Systems—H. K. PORTER COMPANY

Raymond E. Baker, Head Of Southwest's P&P Division

Mr. Baker, former vice president-mfg. of Weyerhaeuser Timber Co., Wash., has joined Southwest Forest Industries, Inc., and on April assumes his new post as vice president in charge of the Arizona firm's new pulp and paper mill division. His appointment was reported briefly in these columns last month, Mr. Baker will supervise construction and operation of Southwest's new multimillion-dollar pulp and paper mill at Snowflake, Ariz. The new mill is part of Southwest's current large-scale expansion program. In recent months, the company purchased the Dolan-Burris Box Co., Phoenix, wood and paper box plant for the industrial markets in Arizona and nearby states, completed a 101,000-sq. ft. plant in Glendale, Ariz., for the production of both corrugated board and finished board containers, and effected a consolidation with three Los Angeles companies-Wilson Paper Co., Vernon Container Corp., and Pioneer Wrapper Co.

A native of Salem, Ind., Mr. Baker was graduated from DePauw University, Greencastle, Inc., with an a.b. degree as a chemistry major. He later received degrees of m.s. and ph.d. from the Institute of Paper Chemistry, Appleton, Wis. Prior to joining Weyerhaeuser, Mr. Baker was with the Brown Company, Berlin, N.H., Munising Paper Co., Munising, Mich., and Diamond Match Co., Ogdensburg and Plattsburg, N.Y. He and his wife,

Jane, have four children.

F. Thomas King, formerly sales rep. for National Starch & Chemical in Pac. Nw., has affiliated with Asten-Hill Mfg. Co. as West Coast representative for dryer felt sales, working out of his Portland, Ore.

March 26 was just about like any other Saturday to Nels H. Sandberg, executive v.p. of Waldorf Paper Products in St. Paul and president of Waldorf-Hoerner Paper Products Co., Missoula, Mont. (see story in March issue of P & P), but this year that date happened to be the 37th anniversary of the day Mr. Sandberg joined the Waldorf firm.

Boise Cascade Corp. promotions: Fred P. Thompson Jr., formerly sls. mgr., to gen. mgr. Western region responsible for



This 250,000 gallon Watersphere built by CB&I is 41 feet to the bottom

Foundation space requirements for CB&I Waterspheres are considerably less than for other types of elevated tanks offering comparable capacity. This feature was a prime factor in solving a prominent pulp mill's recent water storage problem.

Large capacity (250,000 gallons) was needed. However, the ground area available for foundation purposes and erection was severely limited. A CB&I Watersphere was the logical choice. It solved the space problem and met every other requirement of the job.

The Watersphere is a product of CB&I's coordinated services ... a single source and responsibility for engineering, fabrication and erection. The result is craftsmanship in steel, skillfully developed over seven decades of experience. Write today for complete information.

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OFFICES AND SUBSIDIARIES IN PRINCIPAL CITIES THROUGHOUT THE WORLD



The Watersphere and its "big brother", the Waterspheroid are graceful, elevated steel water storage tanks of modern design. An illustrated brochure providing complete design and construction data is available. Write for a copy, today. No obligation, of course.

PP\$#

PULP & PAPER

Strictly Personal

production and sales of container plant at Wallula, Wash, and the one to be built at San Francisco; Gordon Randall, gen. plant mgr. of BC's Burley, Ida. and Wallula container operations, appointed gen. mgr. of new Cascade Container plant being built at Denver; Robert M. Herman, asst. sls. mgr. at Burley plant becomes gen. mgr.; Orie E. Johnson promoted from plant supt. to plant mgr. at Wallula container operation,

EDWIN L. LOVELL, dir. of research for Rayonier Canada, Vancouver, B.C., becomes mgr. of Rayonier's Olympic Research Div. at Shelton, Wash., succeeding BEN T. BRIGGS who requested release from the position's responsibilities.

Johnathan O. Bulkley, president of Bulkley, Dunton & Co., elected to Puget Sound Pulp & Timber Co. board of directors. . . . Bob Draper, Weyerhaeuser Pulp Div. chemist at Everett, participated in the recent Olympic Winter Games at Squaw Valley, Cal. heading group responsible for gathering and recording results of downhill, slalom and giant slalom races. . . Louis H. Blackerby.

















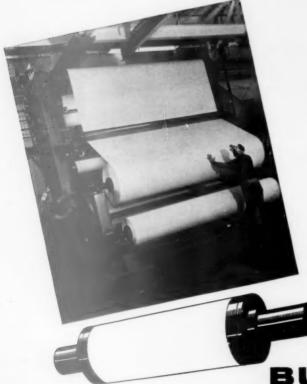




servator of New Jersey before joining I.P. in 1946. Jack Kilborn, Auburn University graduate who has been with IP since 1948, has been named Tech. Dir. of the Natchez mill. He replaces John M. Griffin, who was promoted to asst. mill

Southern

International Paper's Southern Kraft division announces several important promotions. Ian Sim, asst. mill mgr., Springhill mill, moves to the Louisiana mill at Bastrop in the same capacity. Frank Shearer, asst. coordinator of business papers for the div., becomes tech. dir. at Louisiana mill. Mr. Sim has been with IP since 1937, was in charge of the first Kamyr continuous digester in the U.S. Mr. Shearer was state game con-



GREAT NAMES in the Paper Industry: The Mead Corporation

A Butterworth bleached roll with special filling is used in this supercalender stack at The Mead Corporation, Chillicothe, Ohio.

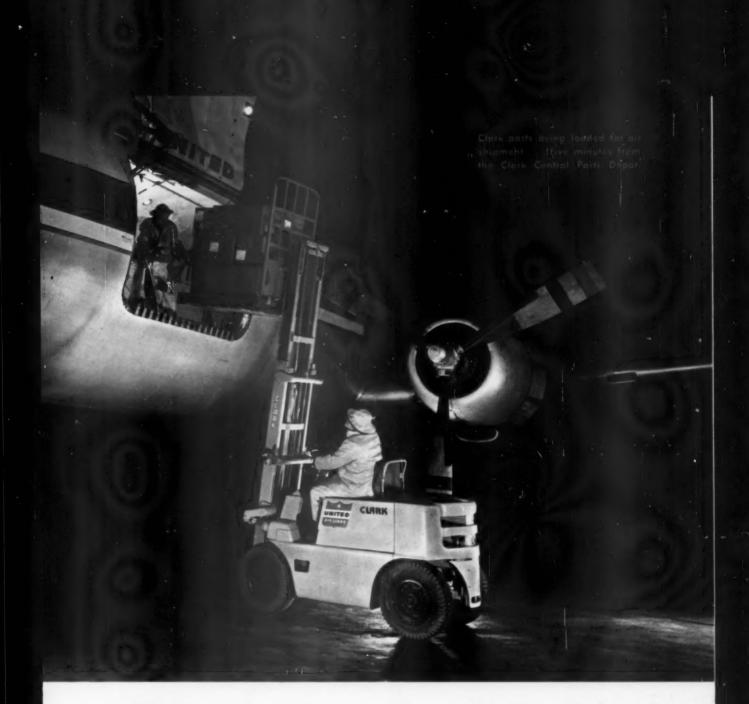
Butterworth Rolls, used by the leaders in the Paper Industry, are made to specification and checked for hardness, smoothness, and density before delivery. You can see the difference in finer finishes, extra hours of service without turning down or refilling.

Furnished new or refilled for every calendering need. And you get Butterworth Rolls at competitive prices. Quotations on request.

H. W. BUTTERWORTH & SONS COMPANY Bethayres, Pa. Division of Van Norman Industries, Inc.

BUTTERWORTH

More than 60 years of Roll-Making Experience



Make sure of the service... before you buy!

Costs start climbing the minute a fork truck goes out of service. The national average for truck downtime is conservatively estimated to be \$16.48 per hour. An important reason why fast, qualified parts service is essential.

It's why Clark dealers offer you the largest inventory of parts in the industry. It's why Clark maintains a 16,000 mile private wire communication system. It's why Clark has built a multimillion dollar parts warehouse near Chicago's Midway Airport.

Everything in the Clark service system is geared to speed. Vital materials handling equipment must be back on the job fast! To assure you of fast service Clark provides you with over 117

service facilities throughout the nation . . . each carrying a complete parts inventory. To back this up, the Clark Central Parts Depot maintains an inventory of over 5 million parts . . . emergency parts that can be air-shipped to any part of the country in a matter of hours. Only Clark offers you this service.

Want to see how it's done? A colorful brochure and a film strip describing this service system are available through your local Clark dealer. You'll find him listed in the yellow pages under "Trucks,

Industrial." Or, if you prefer, write direct to: Clark Parts Service, Clark Equipment Company, Battle Creek, Michigan.



mgr. at Springhill. Mr. Griffin, a graduate of North Carolina State College, has been with I.P. since 1938. Charles D. McDonald, chief chemist at Moss Point, has been promoted to tech. dir. at the Georgtown, S.C., mill. He began as a lab tester in 1940. J. L. Trahan has been named tech. dir. and Joel Baker is now prod. supt. of the Mobile, Ala. mill. Mr. Baker moves to Mobile from Georgetown, where he served as tech. dir. Mr. Trahan started with I. P. in 1940 after graduating from Louisiana State U.

Thomas M. Smith moves up from tech.

dir, of the Mobile mill to div. asst. coordinator of Business Papers, stepping into Mr. Shearer's former position. Mr. Smith joined I.P. in 1933, has been chief chemist and asst. dir. of research during his years with the company. James Smith moves up from asst, paper mill supt. at the Mobile mill to div. asst. coordinator of News and Groundwood Specialties. H. Minge Reed, Jr., has been promoted from plant engineer at Springhill to div. coordinator of maintenance. Richard D. Quina moves into his position at Springhill.



Raymond McCormick, Gen. Supt., Continental Can in Augusta

He will head all operations at the bleached sulfite mill now under construction in Augusta, Ga., according to W. L. Schnorbach, plant mgr. Wtih Continental Can five years, he was for many years associated with National Container Corp., Jacksonville, Fla.



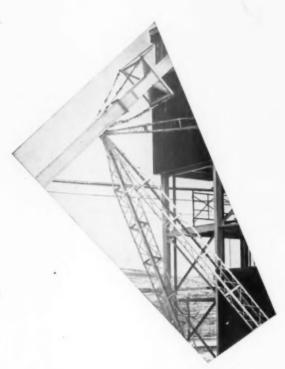
J. S. Brice Named Div. Mgr. for Goodyear Chemicals

He will cover the southeast for Goodyear out of Atlanta. He is a graduate of Coe College with a masters degree from the Institute of Textile Technology in Virginia.



Buckeye Gets Safety Award

Beaming with pride, Buckeye's safety engineer, Ohed Windham, accepts the National Safety Award of the American Pulp and Paper Assoc. after setting a record of the lowest accident frequency rate during the past five years of any of the 340 reporting mills. The Memphis plant's last lost-time accident occurred more than four years ago. John R. Kimberly, president of the APPA, makes the presentation. The plant has rung up more than 4,996,000 accident free hours.



your program
for continued
business growth
and profits deserves the
services of experienced specialists



J. E. SIRRINE COMPANY

ENGINEERS SINCE 1902

GREENVILLE, SOUTH CAROLINA

A DEPARTMENTALIZED ENGINEERING ORGANIZATION SERVING . BUSINESS . COMMERCE . INDUSTRY



The New LOUIS ALLIS Select-A-Spede® Drive —First with field-proved All-Transistor Control



a high-gain, high performance d-c drive with unmatched flexibility and low upkeep

Here's a superior adjustable speed drive with simplified transistor-magnetic amplifier control. It's the easiest drive to set up and operate. A twist of the dial gives you stepless speed adjustment from zero to full speed in either direction. Each adjustment is independent, thus sparing you the need for compensating adjustments of inter-related settings. You get more consistent day to day operation because transistors — unlike tubes — are highly dependable.

The new Select-A-Spede defies obsolescence. To add functions you simply have your electrician install any of 13 "building-block" control circuits as your conditions require. These circuits come on inexpensive 6" x 6" panels ready for installation and are immediately available from Louis Allis stock. Thus a rebuilding or adaptation job that, on former equipment, cost thousands of dollars — excluding downtime — can now be done at

a fraction of the cost and time right in your own plant! High quality transistors, field proven in missiles and other advanced electronic equipment, assure you of a high degree of dependability with a life expectancy of 15 or more years. Printed low-voltage transistor circuits are virtually trouble-free and can be quickly and easily replaced from low-cost stock,

Further savings are provided by the new Louis Allis Flexitorq® drive motors through vastly improved commutation, low brush wear, and their ability to safely withstand momentary overloads of 400% of normal horsepower rating.

Select-A-Spede sizes from 5 to 400 hp, speed ranges up to 20:1. Contact any one of the 60 Louis Allis District Offices for information and application assistance. Or write for bulletin 2001 to The Louis Allis Co., 444 E. Stewart Street, Milwaukee 1, Wisconsin.

LOUIS ALLIS

340 TONS PER DAY

...MgO Plant On Line At Alaska Lumber & Pulp, Sitka

With the start of the 340 ton per day Alaska Lumber & Pulp Company plant, over 650,000 tons of pulp per year are being produced by the MgO Process.

This is the second* magnesia bi-sulfite dissolving pulp mill in Alaska, and the largest industrial improvement since statehood. Utilizing the commercially-proved, closed cycle MgO Recovery Process, Sitka's pre-dicted chemical usage is 20 lb of MgO and 50 lb of sulfur per ton of unbleached pulp. Two B&W recovery boilers, each

designed to process 550,000 lb of waste sulfite liquor solids per day, generate a combined total of 228,-000 lb of steam per hour. Two B&W power boilers provide supplemental steam for power and process to



320,000 lb per hour burning bark or oil singly or in combination.

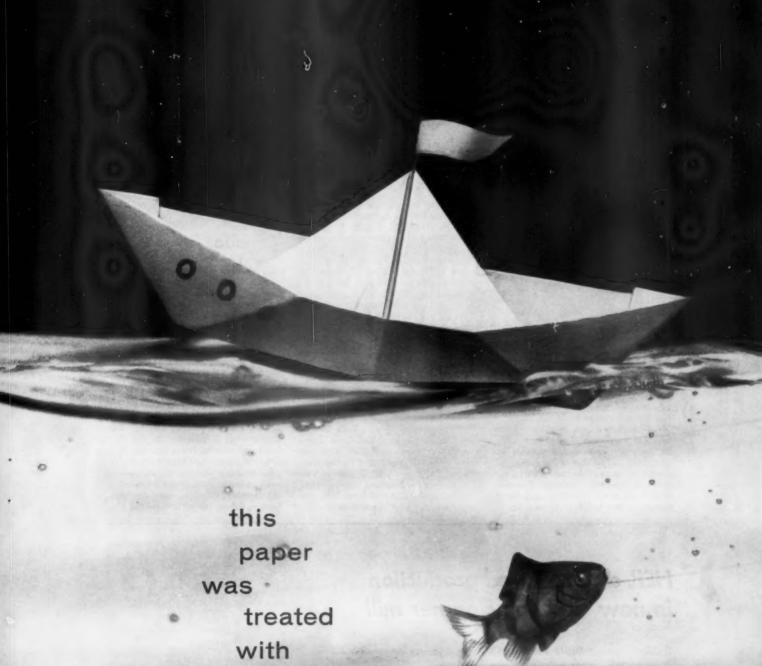
The MgO Process provides economical recovery of chemicals and heat from the waste sulfite liquors. In addition, air pollution and process odors are reduced to an absolute minimum. The Babcock & Wilcox Company, Boiler Division, Barberton, Ohio.

*Sitka is the fifth MgO plant built in recent years in the continental U.S. Others are Weyerhaeuser Timber Company, Longview, Washington; Ketchikan Pulp Company, Ketchikan, Alaska; Weyerhaeuser Timber Company, Cosmopolis, Washington; Brown Company, Berlin, New Hampshire. A sixth plant is on order for Hylite Bruks in Sweden.



THE BABCOCK & WILCOX COMPANY

BOILER DIVISION



SCRIPTITE* 33

*SCRIPTITE, LYTRON: Reg. U. S. Pat. Off

Monsanto Scriptite 33—a melamine resin supplied as a dry fine powder—imparts high wet strength to many paper products. It increases wet bursting strength, dry tensile strength, wet rub resistance... improves dry stiffness, dry mullen, folding endurance, wax pick, dimensional stability. Monsanto offers a wide range of Scriptite resins for increasing the wet strength and water resistance of paper and board. Also available are Monsanto Lytron resins, water dispersal resin polymers, for efficient paper and board coating. For complete information of Scriptite 33 and other Monsanto paper resins, write Monsanto Chemical Company, Plastics Division, Room 748, Springfield 2, Mass.



MONSANTO DEVELOPER IN PLASTICS

The Monsanto line of paper resins also includes: SCRIPTITE 40 urea type wet-strength resin. SCRIPTITE 54 water-insoluble adhesive for paper and liner board. SCRIPTITE 55 low viscosity resin for improved water resistance, wet and dry rub resistance with easy handling. SCRIPTITE 52 in combination with formaldehyde, gives water resistance to folding boxboard and jute liner. SCRIPTITE 50 unsurpassed printability, improved surface characteristics on boxboard. SCRIPTITE 45 new thermosetting resin for stabilization of paper, LYTRON* water dispersal resin polymers for coatings.

Strictly Personal



C. H. ("Cam") Niederhof Named to S. C. Committee

Mr. Niederhof, Wood Procurement dept. mgr. for West Virginia Pulp & Paper Co., Charleston, is appointed to the South Carolina Forestry Study Committee. The 11-man group will investigate the state's progress and needs in forestry and will report to the governor and legislature. Mr. Niederhof is past president of the Southern Pulpwood Conservation Assn. and presently serves as a director of the group. He is a member of the exec. committee of the Appalachian section, Society of American Foresters; Foresters Council of South Carolina, and South Carolina Forest Industries Committee.

Pulpwood

American Forest Products Industries announces through its president, John H. Hinman, board chairman of International Paper Co., 1960 chairmen of its national committees: Walter J. DeLong, Weyerhaeuser Co., Tacoma, Wash.-Program & Planning; Paul M. Dunn, St. Regis Paper Co., New York, N. Y.-Education; Casey E. Westell Jr., Packaging Corp. of America, Filer City, Mich. Wildlife & Recreation; J. E. McCaffrey, International Paper Co., Mobile, Ala.-Technical Forestry; W. Kirk Sutlive, Union Bag-Camp Paper Corp., Savannah, Ga.-Public Relations, and Dave James, Simpson Timber Co., Seattle, Wash.-National Council.

William C. Hammerle is new forester for American Pulpwood Assn.; he was formerly exec, sec. of Southeastern Pine Marketing Institute. . . J. H. Merrill, woodlands vice pres. for Great Lakes Paper Co. Ltd., Fort William, Ont., has been reelected president of Ontario Forest Industries. . . E. G. Shorter, vice pres., wood products and logging, Mac-Millan, Bloedel & Powell River Ltd., was principal speaker at a recent camp management conference in Vancouver, B. C.

Arthur Ray Shirley, new director of the Georgia Forestry Commission, said recently: "It is my aim to continue a sound and progressive forestry program to serve the timberland owners of the state in the most effective and economical way pos-

Canada

LEON KOERNER, who migrated to Canada from his native Czechoslovakia 20 vears ago to found Alaska Pine & Cellulose Ltd., and who later sold controlling interest in it to Rayonier Inc., has made a gift of \$400,000 to the Univ. of British Columbia in the name of his wife, who died last year. The gift brought his recent contributions to community projects to more than \$1,000,000. . . . DAVID ADIRIM has been named purchasing agent, Crown Zellerbach Canada Ltd., succeeding FRED OXENBURY Sn., recently appointed special asst. to the sec. of CZC, T. A. A. FRASER. Mr Adirim joined the company in 1941 as asst. purchasing agent for the Canadian Western Lumber div. Mr. Oxenbury has been with the company since 1927. when he joined the Ocean Falls div.

D. M. JACQUEST, for the past several years controller for a large food distributing company, has been made vice pres., finance, Sidney Roofing & Paper Co. Ltd.,



Waldorf-Hoerner Paper Products Co. chose Heil dryers to handle the carefully controlled drying of pulp in its new Missoula, Montana, plant. The first pulp mill in the state - and the first chemical pulp mill of its kind anywhere - the new plant can ship 250 tons of kraft pulp daily.

The Heil dryer used here flash-dries pulp to a uniform moisture content, A stream of hot air carries pulp through a three-pass drum. Fine particles move

through quickly to cooler zones and are not over-dried, while heavier ones with more moisture move more slowly so each is dried to the same uniform moisture content regardless of size. Compound showering flights on each drum keep pulp moving evenly . . . eliminate surging.



A subsidiary of

Founded 1901

3000 W. Montana Street . Milwaukee 1, Wisconsin

HOW YARWAY BLOW-VALVES REDUCE DIGESTER OPERATING OW Yarway olow Yarway olow valves Result— COSTS

Faster blow

Valve by valve comparisons show Yarway Seatless have up to 100% greater discharge area than some other digester blow valves of the same nominal pipe size. Result—faster discharge, lower pressure drop.

Cleaner blow

Steam purging is unnecessary since Yarway's seatless hollow-sliding-plunger design eliminates all pockets where wood chips or tramp metal can hang up.

Tighter seal

Yarway's tight seal (spring-loaded packing rings above and below inlet port) prevents loss of cooking liquor and insures thorough cooking of pulp.

It all adds up to reduced blowing time,

more cooks per day, greater output of pulp— LOWER DIGESTER OPERATING COSTS.

Send for free bulletin on the selection, operation and maintenance of digester blow-valves.

Yarway Blow-Valve in open position. Note full, free discharge.



REMOTE-CONTROLLED, ELECTRIC OR HYDRAULIC OPERATION

Yarway Digester Blow-Valves may be controlled from any remote point. Choice of motor-unit or hydraulic-cylinder operation.

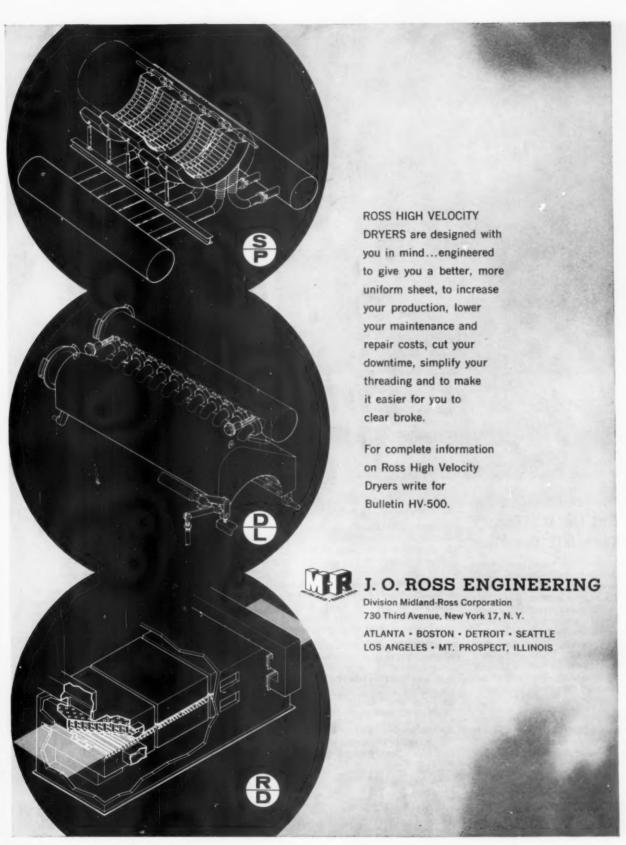
YARNALL-WARING COMPANY

100 Mermaid Ave., Philadelphia 18, Pa. BRANCH OFFICES IN PRINCIPAL CITIES

YARWAY DIGESTER BLOW-VALVES

WE'RE SELLING AIR ...

... all the drying air you need at precisely the right temperature, at the proper velocity, exactly where you want it, day after day with complete reliability...this is Ross...



PULP & PAPER - April 1960



Compact RIBEID. 300 Power D with Accessories

Portable, Fast and Easy-to-Use. Low Cost. 1/8" to 2" Capacity; Power for up to 12" Geared Tools

Here's such an amazing power package that you'll have to try it to believe it. It's built around the compact, rugged RIEDID 300 Power Drive with famous RIDGID Speed Chuck that grips tight-forward or reverse, yet sets and releases easily by hand. Cam-action rear centering device holds even long lengths centered for perfect threads every time. Sturdy No. 1206 Stand foids for easy carrying . . . is extra rigid when in use.

No. 310 Carriage, made of strong aluminum alloy, slides smoothly on drive support arms . . . holds die head and cutter ready for

instant use. Snugs up tight to chuck for close threading and cut-off.

RIEDID 535 Quick-Opening Die Head, shown here, threads 1/2" to 2" pipe with just 2 sets of dies . . . adjusts to size right in machine . . . no fumbling for right size threader . . . no slow back-off. All other Machine Pipe and Bolt Die Heads can be used. Add a No. 19 Nipple Chuck, and you can thread close nipples.

RIPOID 360 full-floating Cutter has slide action that adjusts to all pipe irregularities . . . wide rolls for straight cuts at machine speed. Capacity: 4" to 2" pipe and conduit—%" rod. E-1032 wheel for 1" rod available.

See and try this time-and-work-saving RIBOID 300 group at your **Supply House!**



Vancouver, B.C., which he joined in another capacity a few months ago. . . .







Matheson

Clark

Ketchen

Three Vice Presidents Named by Fraser Companies

K. W. Matheson is vice pres. of Fraser Companies Ltd., Edmundston, N. B., to succeed L. M. Sherwood, retired. He was formerly asst, to the gen, mgr.

C. T. Clark, mgr. of Edmundston pulp and board mills, becomes vice pres. for manufacturing, and W. A. Ketchen, technical director for the subsidiary Fraser Paper Ltd. is named vice pres., technical





Melville

Kenwood Mills Ltd. Appoints Felt Sales, Service Executives

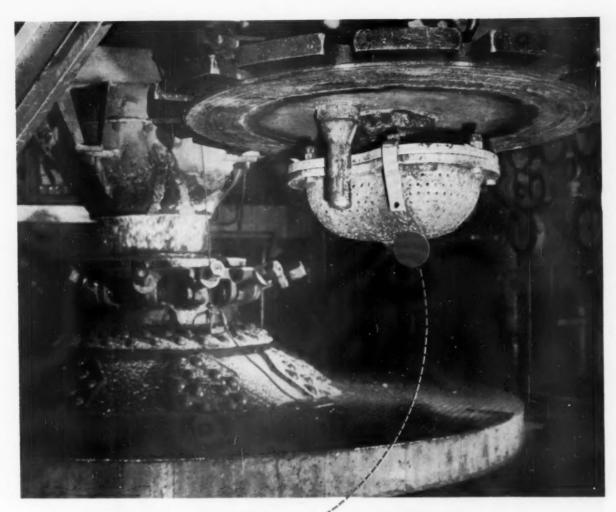
MacMillan Boyd, director of sales, Ken-wood Mills Ltd., Amprior, Ontario, an-nounces two senior appointments in the Sales Division of the company which sup-plies papermakers' felts to mills in many

countries. Jack Melville has been promoted from

Jack Melville has been promoted from assistant sales manager to sales manager, Felt Division. He will have complete responsibility for all domestic sales in Canada and for all foreign felt sales territories except Latin America.

Stuart Wadell, as manager-service engineering, will direct the work of Kenwood's service engineers located across Canada, and will also continue his responsibility for all felt sales in Latin America. In all capacities both men will report directly to the director of sales,

JAMES E. VALLILLEE, 58, director and executive vice president, Ontario Paper Co., Thorold, Ont., Canada, and its associated companies, including Quebec North Shore Paper Co., and Quebec & Ontario Transportation Co., died Jan. 8 at his St. Catherine's Ont., home. He joined Ontario Paper Co. in 1921 as a junior billing



ESCO DIGESTER CASTING still going strong AFTER 28 YEARS

This ESCO Alloy 45S top digester relief strainer casting is still resisting the corrosive attack of sulphur dioxide, acid fumes and steam at 280°F, and 80 psi. after 28 years of continuous service. This is but one of many, many testimonials that demonstrate the thorough understanding of pulp mill requirements by ESCO metallurgists.

ESCO knows digester systems and makes a complete line of custom valves and fittings. ESCO custom castings in Alloy 40, 40L, 45L, 45S, 43H, 32C, 20 (Duriron) and Hastelloy* are found in pulp mills everywhere.

Tell your nearby ESCO representative about corrosion problems in your plant, or write direct. Ask for your free copies of Allay Notebook No. 7, "What Is Corrosion?", and the Process Equipment Catalog 175.

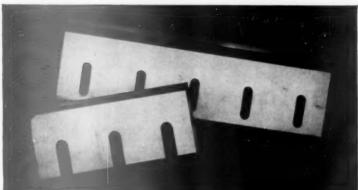




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Die Blocks • Forgings • Back-Up Roll Sleeves • Rings • Industrial Knives • Materials Handling Equipment • Pressure Vessels • Hardened and Ground Steel Rolls • Vacuum and Consumable Electrode Melted Steels

clerk and two years later started his rise in the company as purchasing and accounting director for the woods operations.





Nesbitt

Quattrocchi





Spencer

Curri

Promotions in Howard Smith Paper Mills, Ltd.

President D. S. Abbott announces W. P. Nesbitt, formerly manager of the Cornwall mill, is now gen. mgr. of the pulp and paper division of the company. S. J. Quattrocchi, of Alliance Paper Mills, a Howard Smith subsidiary, has succeeded Mr. Nesbitt at the newly expanded Cornwall mill. H. S. Spencer, until recently manager of the company's Beauharnois mill, has been appointed to Alliance as vice president, and he will make his headquarters at Merritton, Ont. D. S. Currie has succeeded Mr. Spencer as manager at Beauharnois. He was formerly assistant mill manager there.

Mr. Nesbitt has been with the Howard Smith organization since 1930 when he joined Alliance, but he has also been with Fraser Companies Canadian International Paper Co. and Consolidated Paper Corp. at Grand'Mere. Mr. Quattrocchi entered the industry with CIP in 1931 and in addition to his experience with Howard Smith has served Westfield River Paper Corp. at Manayunk and West Conshohocken, Penn.

Mr. Spencer's first job in the industry was with Interlake Tissue Mills, later going to Strathmore Paper Mills at West Springfield, Mass. He joined Howard Smith in 1927. Mr. Currie entered the Howard Smith organization in 1928 and has been with the company ever since. He was one of the original members of the research department under Dr. G. H. Tomlinson and Dr. G. I. Hoover.

Let the LAMB 'Pencil Man' (§ help you pre-plan

- Roll Finishing Systems
- Sheet Finishing Systems
- Pulp Finishing Systems
- Individual Unit



Yes-the "educated pencils" of the LAMB engineering staff can shortcut your way to increased profits, increased production, and lower operating and maintenance costs. Your carefully planned installation can save you money and step up finishing room efficiency to a profitable volume. LAMB engineers have the experience in the paper mill industry that is essential to enable them to design and engineer the right layout for your individual mill. And, too-if your requirement is only for a single unit-head gluer, roll header, lowerator, stacker, or AIRFLOAT® Tables-you can depend on LAMB to supply the most efficient equipment and provide the best investment that can be made in equipment of this type.



LAMB-GRAYS HARBOR CO., Inc.

Hoquiam, Washington, U.S.A. Phone: GEneral 8-1000



NEW improved design LAMB Head Gluer. Rotating table, adjustable spraying head. Speeds roll wrapping, saves glue, time and manual effort.



NEW LAMB special Ream Conveyors can be engineered to suit your finishing room needs.



NEW LAMB AIRFLOAT Table features continuous air escape through specially shaped holes in table top. Economy design. Stacks of paper float light as a breeze. Self-powered, traveling Skid Stacker shown.

SEEKING **IMPROVED** PAPERS?

NOPCO POINTS THE WAY

Nopco points the way to quality products in pulp and paper operations. Nopco offers a full line of paper chemicals, each specifically designed to yield better products . . . every time . . . with dependability you can count on.

Perhaps the skilled hand of Nopco can go to work for you. Back of every chemical made by Nopco for the paper industry stands Nopco Technical Service—an experienced staff ready to assist with laboratory data and recommendations based upon your specific requirements.

DEFOAMERS WAX SIZES COATING ADDITIVES PITCH DISPERSANTS METALLIC SOAPS RAG COOKING SURFACTANTS DE-INKING AGENTS

FELT WASHING DETERGENTS CALENDER STACK LUBRICANTS ANTIBLOCKING AGENTS DEWAXING AGENTS POLYETHYLENE EMULSIONS

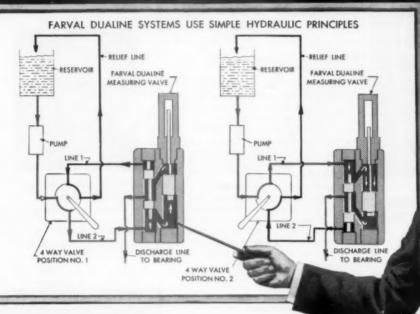
NOPCO CHEMICAL COMPANY 60 Park Place, Newark, N.J.



Plants: Harrison, N.J. • Richmond, Calif. • Cedartown, Ga. • London, Canada



"For positive lubrication of large, medium and heavy-duty installations ... it's a Farval <u>Dualine</u> System!"



With Farval Dualine centralized lubricating systems you get the following distinct advantages over other type systems . . .



- (a) Much lower operating pressures with consequently less danger of soap separation on grease systems. Also, less danger of system damage due to high lubricant pressures.
- (b) Large lubricant passages with no pinhole ports, ensures practically full pump pressure for every metering valve. This is one of the reasons why Farval Dualine systems operate on lower pressures give less sieving and working of lubricants.
- (c) Positive indication at each bearing does not have to depend on the questionable action of a single indicator at the pump.
- (d) Each metering valve individually adjustable for the requirements of the bearing it serves.
- (e) Independent metering valve operation. Should trouble develop with one valve, the system will continue to operate. Only one bearing (not all the bearings) will require hand lubrication until trouble is corrected.
- (f) True lubricant metering. Quantity of lubricant delivered to one bearing is not dependent on any other valve in the system.
- (g) Much easier to spot and correct trouble.

Check with your Farval Representative and see how these versatile systems can improve production operations — reduce costs. Or write for free Bulletin 26-T containing complete engineering information on Farval Dualine systems.

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Walsh Youngchild

Changes in Key Positions for American Cyanamid Co.

Ken E. Youngchild, now a resident of Stamford, Conn., and member of a famous papermaking family, has been appointed general manager of the paper chemical dept. of American Cyanamid Co.'s Industrial Chemicals Division, succeeding John M. Walsh, who has been promoted to assistant to the general manager of the division. Mr. Walsh is a veteran of 40 years with Cyanamid. J. R. Kemmerley has been named sales manager for the paper chemicals department.

Mr. Youngchild recently moved to New York headquarters from the South, and his position as regional manager in that territory was assumed by George Fromm, who bases in Mobile, Ala.

New Starch-Resin Binder System Offered

Feasibility of new starch-resin binder systems for clay coating of paper and board has been demonstrated through research at National Starch and Chemical Corporation's Paper Division laboratories, says Leonard J. Wood, Paper Division manager.

Starch-resin combinations, Mr. Wood said, produce coatings with improved print qualities as well as markedly better calenderability and glueability. He said that these could be achieved with the new system at lower binder costs.

Starch-resin formulas worked out thus far consist of National's Resyns 1103 or 2203 in combination with Kofilm, the company's acetylated starch derivative. Both of these resins are extremely compatible with starch, require no further stabilization and impart markedly improved glueability properties to the finished board.

New Facilities in West

General Aniline & Film Corp. is building a new West Coast headquarters office and warehouse in South San Francisco, Calif.

The General Dyestuff Co., a division of GAF, of which Walter R. Brandt is West Coast branch manager, will move from its present location in San Francisco to the new facilities sometime afte. Aug. 1.

The new building is one story, steel and concrete construction, with an office area of 9,000 sq. ft., and warehouse, 45,000 sq. ft.

Paul K. MacDonald, formerly of the New England office of General Dyestuff Co., a division of General Aniline & Film Corp., at Providence, R.I., is a new salesman for the firm, calling on the paper trade of southern California.



Robert F. Stewart Promoted by Western Precipitation

He becomes vice pres. and asst. gen. mgr. of this division of Joy Mfg. Co., Los Angeles. Mr. Stewart formerly was in charge of sales of dust-collecting equipment. He joined WP in 1946.



■ VAPO SYSTEMS method of conditioning paper is the time-proven method of properly and uniformly adding the desired moisture content to your sheet. VAPO SYSTEMS units are proven spraying surface materials as Starch, Casein, Wax, Clay, etc. Mills report that Vapo Systems paid for themselves in less than a year. ASK ABOUT IT.

*Photo shows one of several installations in a large mill.

WRITE FOR FACTUAL DATA VAPO SYSTEMS 136 Home Ave. Villa Park, III.

New Signode way gets paper to destination in excellent condition

Paper poses a problem that has probably vexed mill and printer alike for as long as paper has been shipped.

How do you keep packaged paper from racking and shuffling during shipment?

Good arrival condition is especially important for fine paper. Damaged edges and misalignment of stacks foul up the performance of high speed presses. And, as just about everybody knows, paper and speed and deadlines are often wrapped up in the same package.

IT'S ONLY AIR

Air is what makes trouble in the packaging of paper. Air is trapped between the sheets as paper is stacked. Trimming helps seal the air in.

IT'S GOT TO GO

Getting that air out is the problem, or was before Signode found the way—but more about that later. Ever try to tighten the belly band on an ornery horse? That's pretty much what paper mills were up against when they applied ordinary strapping techniques to their quality packaged products.

Sometimes, experimentally, they'd throw caution to the winds—beef up top cleats or battens, sacrifice a few of the top (and sometimes bottom) sheets to denting, and really tighten up those steel straps to the limit. Know what would happen in most cases? After a few days of just sitting, air would leak out of the package, and the straps would be loose.

NOW-THE ANSWER

Signode has been working on this problem

with leading paper mills for many years. The answer and the methods that make it work are now available. Compression is the heart of it...the new Signode Compression Strapping Station.

Correct compression expels the air between the sheets, but does not damage the paper.

IT WORKS

Compression strapping the Signode way, which means combining it with other good packaging practices, practically eliminates shuffling, reduces racking, minimizes objectionable bowing in skid tops, and permits substantial over-all savings in paper packaging time and cost.

WE'RE READY

Signode has established a group of competent, trained, and experienced specialists in paper packaging. These men, in addition to and together with our regular field engineering, testing laboratory, and sales representative staffs, are ready to serve paper mills as engineering consultants. They are ready to help you in the important big or little changes in your packaging practices that will get your paper to destination in perfect condition, at less cost.

YOU'RE INVITED

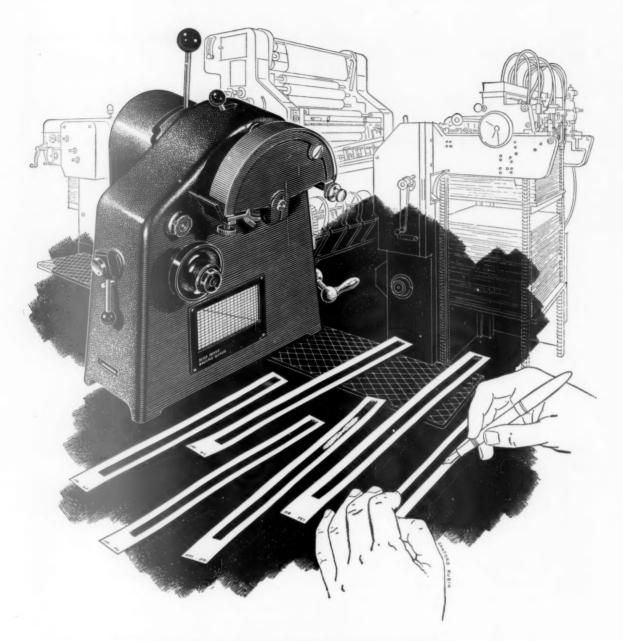
We recognize your right to skepticism, your right to ask to be shown. We, in turn, ask the opportunity to show you what is being done now and to relate it to *your* practices and requirements. We feel sure that you will find it most worth while to look into this, now. The first step is simple. Just write on your letterhead for information about compression strapping of paper.



SIGNODE STEEL STRAPPING CO.

2672 N. Western Avenue, Chicago 47, Illinois

Offices Coast to Coast. Foreign Subsidiaries and Distributors World-Wide in Canada: Canadian Steel Strapping Co., Ltd., Montreal • Toronto



These Exacting Tests Tell the Stayco Story

Accurately demonstrate that Stayco® Starches improve pick resistance, surface sizing . . . increase internal bond and strength.

The I.G.T. printability tester closely approximates the tremendous pounding and demands today's high-speed presses make on papers. Results of these tests consistently show Stayco Starches improve pick resistance . . . smoothness of printing surface . . . ink penetration rate and sheet strength, to meet these most rigid requirements.



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LIGHTEST
COLORS
IN THE
ROSIN SIZE
SCALE
AVAILABLE IN
ACCOBRITE®
ROSIN SIZES

These efficient unfortified gum rosin sizes are proving they can equal the results of far costlier fortified sizes in many mills. Features include especially bright color, high sizing efficiency, low foaming qualities. The lightest colors in the rosin size scale are available in Accobrite. Shipped at 70% or 80% solids, and dry form. For further information and any technical assistance you need, call your Cyanamid paper chemicals representative.

CYANAMID

AMERICAN CYANAMID COMPANY • PAPER CHEMICALS DEPARTMENT 30 Rockefeller Plaza, New York 20, N. Y.

TRONA*...the largest domestic producer of both sodium chlorate & salt cake for the pulp & paper industry.



TRONA ... Papermakers' grade SALT CAKE
ABERDEEN and HENDERSON ... Highest quality SODIUM CHLORATE

fast, efficient delivery of Sodium Chlorate with Trona's new, modern fleet of tank cars.



American Potash & Chemical Corporation

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PULP & PAPER

New Equipment Section

Monorail Palle? Stacker ... Completely Automatic



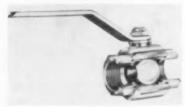
Applications: To stack pulp bales on pallet for shiploading; may also be used without pallet for single stacking in rail car loading.

Advantages: On this completely automatic unit, operator merely selects stack height desired. Stacking cycle is repeated until pallet is loaded to height pre-selected. When pallet is loaded, carrier automatically shifts to a second pallet, and stacking is continued while fork truck removes first load.

Specifications: Constructed on the monorail principle for pick-up-and-setover of pulp bales.

Supplier: Lamb-Grays Harbor Co. Inc., P.O. Box 359, Hoquiam, Wash., Tel: GEneral 8-1000.

New Ball Valve Line ... Reduces Maintenance Cost



Applications: For handling practically all fluids, semi-solids, compressed gases and campressed air.

Advantages: According to the manufacturer, the new ball valves reduce initial in-place and maintenance costs. Both the McCannaseal and McCannaflo units provide full flow of a gate valve, tight shut-off of a globe or needle valve and quicker quarter turn of plug valves. For the McCannaseal, drop is at minimum; top entry is provided for easy maintenance; no lubricant is required. The McCannaflo incorporates compact design; positive

indication of valve position; interchangeable end pieces and seat

Specifications: Design permits both models to withstand temperature of up to 350°F; pressure of up to 700 psi for the McCannaseal and up to 1,000 psi for the McCannaflo. Standard body metals include stainless steel, cast steel, ductile iron, cast iron or bronze. Balls are chrome-plated carbon steel, bronze or stainless steel. Sizes range from ½ in. to 6 in. in screwed or flanged end connections. Supplier: Hills-McCanna Co., 4600 West Touhy Ave., Chicago 46, Ill., Tel: COrnelia 7-9500.

Static Excitation System ... Eliminates Moving Parts

Applications: To replace rotating exciters in industrial and utility areas for medium-capacity steam turbine-generators.

Advantages: Prime advantage is said to be elimination of all moving parts; servicing can be undertaken without removing load from the generator. No longer, it is claimed, will chemically-polluted atmospheres foul contact between copper commutator and carbon brushes. Other advantages, according to manufacturer: (1) quick voltage dip correction; (2) high-level excitation during system disturbances, and (3) flexibility in arrangement. Circuit utilizes both a current transformer and a potential transformer as the power source. Current and potential transformers are provided in all three phases. Under normal conditions, regulator merely makes minor corrections to compensate for field winding temperature changes, saturation effects, etc.; under transient conditions, regulator may supply additional power to force the field. Specifications: Power is obtained from connection to generator terminals, instead of from mechanical drive of the turbine-generator shaft. If there is a prolonged system fault, generator voltage drops, and potential transformer output approaches zero. At the same time generator current will rise to several times normal, giving power output through current transformer. System uses automatic voltage regulators and silicon diode rectifiers. Supplier: General Electric Co., 1 River Road, Schenectady 5, N. Y., Tel: 4-2211.

Skid Turner

. . . Simplifies Materials Handling

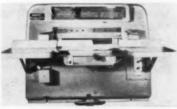


Applications: For turning a full skid of stock in the finishing room.

Advantages: In addition to time and labor savings, supplier claims reduction of waste, more accurate trim, easier skid to pallet transfer and a faster way of inverting paper. It is said that one man can turn a full skid of curly or wavy stock in 55 sec. so that curl is down and a more accurate trim obtained. Skid load can be compressed prior to trimming or transfer to pallet for shipping. Especially-designed side structure gives additional support to load during turn. No fixed location is required. Specifications: Length, 96 in.; width, 60 in.; height, 96 in.; capacity, 5,000 lb.; size of skids, from 28 by 38 in. to 51 by 76 in.

Supplier: Southward Machine Co., 30 Warren Ave., Portland, Maine, Tel: SPruce 4-1424.

Clamp Paper Cutters ... "Priced for Economy-Minded"



Applications: For fast and accurate cutting.

Advantages: Three new units (34%-, 42- and 52-in.) feature hydraulic clamping, standard or automatic spacer operation. Shear angle is long and low for cutting through heavy lifts. Excess air is fully removed from the lift before cutting action begins. Clamp pressure can be quickly and easily adjusted according to stock

type. Two-hand operation is standard. Clamp can be actuated by foot treadle. Spacer operation for increased productivity is available as optional feature. Accuracy is said to be within 0.004 in.

Specifications: The new Regents offer a 42-stroke-per-min, knife speed. Clamping openings range from 4½ in. on the 34½-in, cutter through 6 in. on the 52-in, machine.

Supplier: Lawson Co., 2011 Hastings St., Chicago 8, Ill., Tel: CAnal 6-5300.

Paper Roll Grab

. . . Roll Ranges: 23 to 40 in.



Applications: For use with the Model J sit-down rider-type fork truck in meeting the "diverse requirements of the paper manufacturing, paper warehousing and remanufacturing industries."

Advantages: The 180° roll grab combines clamping and rotating functions to make a single integral paper roll-handling unit. The 180° rotation allows the operator to set the roll on either end; and, according to the manufacturer, thin arm design makes it possible to break out vertical rolls from tightly-stacked freight cars and warehouses.

Specifications: Unit handles a roll range of 23 to 40 in. in both vertical and horizontal positions.

Supplier: Lewis-Shepard Products Inc. (Dept. R9-32), 125 Walnut St., Watertown 72, Mass.

Charge Control Unit

. . . for Electric Industrial Trucks

Applications: For providing proper charge control to help prolong the high-capacity working life of electric industrial truck batteries.

Advantages: The MP-3 automatically controls the battery charging equipment as it brings the battery to a full state of charge and then automatically terminates the charge. The

unit is said to require no attendance or resetting, regardless of the length of normal charging time. The unit can be mounted readily with two screws or bolts in a vertical position on the charger or on a wall. Lead-in wires from the charger can be pulled inside the case and connected to the terminal strip after the unit is mounted. Vital components can be removed easily and replaced without demounting the unit.

Specifications: The MP-3 is 6% in. wide, 8% in. high and 4% in. deep. The control indicator extends % in. beyond the piano-hinged door. The unit can be selected for charging specific-sized batteries ranging from 6 to 60 cells.

Supplier: Electric Storage Battery Co. (Exide Industrial div.), Rising Sun and Adams Aves., Philadelphia 20, Pa.

Boiler Return System ... Saves Fuel and Steam



Applications: To maintain positive differential between steam supply and return lines.

Advantages: High-pressure boilers and steam processing units are said to operate at top efficiency. Condensate and air are quickly evacuated from steam line. Steam requirements are reduced since condensate is returned to boiler usually within 10 degrees of temperature of saturated steam.

Specifications: Closed system consists of receiver tank for condensate, two 2-stage pumps, differential valve, necessary piping and remote electrical control panel. Both pumps operate when processing units are started. At predetermined pressure, one pump automatically cuts off and other maintains discharge pressure necessary to return condensate directly to boilers. System is built in 10 sizes, with boiler capacity range from 100 to 2,000 hp. Supplier: Stickle Steam Specialties Co., 2215 Valley Ave., Indianapolis 18, Ind., Tel: IMperial 7661.



April 1960 - PULP & PAPER



CRIME DETECTION LABORATORY

Where Houghton Learns What Kills Foam Most Effectively

DE-AIREX is Houghton's brand name for defoamers—a well-balanced line to put the hex on troublesome foam problems.

But it's one thing to make a good defoamer, and quite another to demonstrate and prove its value without taking a chance on the production of your mill.

Here is where our Personalized Paper Mill Service fills a gap between product and adoption—between promise and fulfillment. To find out which De-Airex defoamer best fits your need, we are equipped either to pre-test in our Laboratory or right in your mill, using a portable test kit and your own paper stock.

This technical service proves product value, helps decide which variety will suit your purpose. And there is a Houghton plant near you for prompt delivery. We suggest you get details of these products and services. Write E. F. Houghton & Co., 303 W. Lehigh Ave., Philadelphia 33, Pa.

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"Our trucks have a forty mile county road logging haul over adverse grades, each truck making two complete round trips each working day. Our shop foreman in charge of maintenance, reports that with the use of LUBRIPLATE Lubricants there has been a minimum of truck down time and replacements of bearings and gears. The double reduction gears with LUBRIPLATE APG-140 has shown a saving of fifty per cent over previous operations."

REGARDLESS OF THE SIZE AND TYPE OF YOUR MACHINERY, LUBRIPLATE GREASE AND FLUID TYPE LUBRICANTS WILL IMPROVE ITS OPERATION AND REDUCE MAINTENANCE COSTS.

LUBRIPLATE is available in grease and fluid densities for every purpose . . LUBRIPLATE H. D. S. MOTOR OIL meets today's exacting requirements for gasoline and diesel engines.



For nearest Lubriplate distributor see Classified Telephone Directory. Send for free "Lubriplate Data Book" . . . a valuable treatise on lubrication. Write Lubriplate Division, Fishe Brothers Refining Co., Newark 5, N. J. or Toledo 5, Ohio.



Vertical Centrifugal Pump ... for Chemical Process



Applications: For a wide range of liquids, specific gravities and viscosities from light hydrocarbons to heavy slurries.

Advantages: Known as Type pHV, the new line is available in a wide range of sizes and capacities. Supplementing Dean Bros.'s horizontal line (Type pH), the pumps are said to meet practically all corrosive acid and caustic applications in a 1,500-degree temperature range.

Specifications: Available in 14 sizes ranging in capacity from 5 to 500 gpm at heads of from 10 to 120 ft. and settings of from 3 to 16 ft. (inside or outside tank-mounted). Produced in 17 alloys, the temperature range is from -300°F to 750°F.

Supplier: Dean Bros. Pumps Inc., 323 West 10th Street, Indianapolis 7, Ind.

Viton-Faced Plugs ... Now Standard on DZ Valves

Applications: For dead-tight shut-off on highly corrosive liquids, gases and shurries

Advantages: Physical properties of Viton (a duPont trade name) are said to make it an "ideal plug-facing material." It does not cold flow; it is highly resilient, insuring tight shut-off, and it is not damaged by slurry particles. Temperature limit is higher than for most rubber compounds.

Specifications: Available on eccentric valves through 6 in. On some services the temperature limit is as high as 350°E

Supplier: DeZurik Corp., Sartell, Minn., Tel: (St. Cloud) BLackburn 1-0221.

Motor Protection Relay ... Convenient, Versatile Package



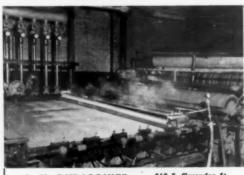
Application: For protection from very

light to heavy overloads.

Advantages: Unit (Type COM-5) combines several elements to more closely match motor heating curve. Whereas formerly several independent relay packages were required for complete protection, the COM-5 provides a "more convenient and versatile package."

Specifications: From minimum pickup to 175% top value setting, alarm is sounded, and operator is allowed 5 to 10 min. to remove trouble. With medium overloads, normal time delay tripping protection is provided. Relay provides instantaneous tripping on heavy fault current.

Suppler: Westinghouse Electric Corp., P.O. Box 2099, Pittsburgh 30, Pa., Tel: EXpress 1-2800.



J. H. DUPASQUIER

560 E. Clarendon St. Gladstone, Oregon Paper Production
with
DUPASQUIER

DUPASQUIER
DRIPLESS STEAM
SHOWER BOX

- Preheats the Web
 U. S. patent 2,838,982.
 Changes Water Viscosity
 THUS FREEING WET MAT
- Allowing Speed Increase
 Custom Built for Any Machine
 Write for Illustrated Folder

Canada Pat, 1955 Other pat, pdg.

By every standard... WEST END MEASURES UP AS THE QUALIFIED SUPPLIER OF SALT CAKE

- PROCESSING OF ORDERS
 - HIGH QUALITY

- ABUNDANT STORAGE

- FLEXIBLE AND
 EFFICIENT
 LOADING AND
 SHIPPING
 - PRODUCTION CAPACITY
 - SOURCE OF RAW MATERIAL
 - ALL COMMIT MENTS SCRUP ULOUSLY MET
 - FRIENDLY, HELP-FUL ATTENTION TO INDIVIDUAL NEEDS
 - PROMPT,
 AUTHORITATIVE
 ANSWER TO
 EVERY INQUIRY

However you view
your needs, you will
find in West End a
Eunique coordination of
Especialized services,
Estensive production
Etacilities and product
Eexcellence essential
Eto the prompt, effiEcient handling of indi-

Abundant storage

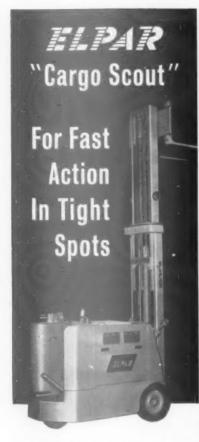


Vast reserves of finished products stored in extensive tank facilities are immediately available to meet any regular or emergency requirement promptly and easily regardless of market conditions. As West End increases production to serve an ever-expanding market for its products, storage facilities are constantly being enlarged to maintain the abundant level of chemicals in reserve.



WEST END CHEMICAL COMPANY . DIVISION OF STAUFFER CHEMICAL COMPANY

1956 WEBSTER STREET, OAKLAND 12, CALIF. . PLANT: WESTEND. CALIF.



SHORT TURNING

Short wheelbase, rounded rear corners and 180° turning angle of ELPAR's "Cargo-Scout" assure maximum maneuverability in narrow aisles, crowded docks and other confined spaces!

HIGH SPEED

ELPAR's high speed lift and travel plus fast acceleration assure more work in less time.

SAFETY

The stand-up operator's position on the ELPAR "Cargo-Scout" means he can get off fast in emergencies. Duplicate hand and foot controls make it easy to drive this truck backward when bulky loads limit forward vision.

4 models = 2, 3, 4, & 5,000 lbs.

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Meeting Dates Calendar

April 4-6

Southern Pine Assn. 45th Annual Con-

Roosevelt Hotel, New Orleans, La.

April 6-7

Ninth Annual Forestry Symposium Louisiana State Univ. School of Forestry, Baton Rouge, La.

April 14

Ohio TAPPI ("High Polymers")
Miami Univ. Student Union, Oxford,

Northeastern Loggers' Assn. Sixth Annual Northeastern Logging Congress ("Trans-port of Logs and Wood") Hotel Hamilton, Utica, N. Y.

April 23

Michigan PIMA (Ladies Night) Hotel Harris, Kalamazoo, Mich.

April 28-30

Pacific TAPPI and Pacific Coast Technical Section, CPPA (joint meeting) Leopold Hotel, Bellingham, Wash.

New York-Canadian PIMA ("Pulping and Sheraton-Syracuse Inn, Syracuse, N.Y.

Instrument Society of America Elec-trical Safety Instrumentation Symposium Wilmington, Del.

Connecticut Valley PIMA Hotel Northampton, Northampton,

Instrument Society of America Instru-ment-Automation Conference and Exhibit Civic Auditorium and Brooks Hall, San Francisco, Cal.

May 10

Golden Gate District TAPPI (True Memorial Lecture) Hotel Clarmont, Berkeley, Cal.

Fluid Controls Institute Inc. 1960 Spring Meeting
The Greenbrier, White Sulphur Springs, W. Va.

Ohio TAPPI (Ladies Night)
Hartwell Country Club, Cincinnati,

May 13-14

Pennsylvania-New Jersey-Delaware PI-MA Hotel duPont, Wilmington, Del.

May 23-25

TAPPI Coating Conference Edgewater Beach Hotel, Chicago

American Society of Mechanical Engineers (Design Engineering Conference)
Coliseum, New York, N. Y.

Waste Paper Symposium (Waste Paper Utilization Council) Conrad Hilton Hotel, Chicago

National PIMA Annual Convention St. Francis Hotel, San Francisco, Cal.

June 14-16

TAPPI Bleaching Conference Edgewater Beach Hotel, Chicago

TAPPI Forest Bilogy Symposium New Washington Hotel, Seattle, Wash.

September 18-21

National Paper Trade Assn. Semi-Annual Fall Meeting Conrad Hilton, Chicago

September 19-21

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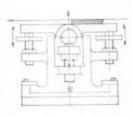
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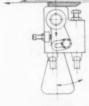
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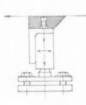


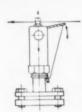


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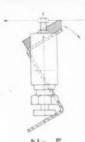


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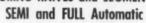
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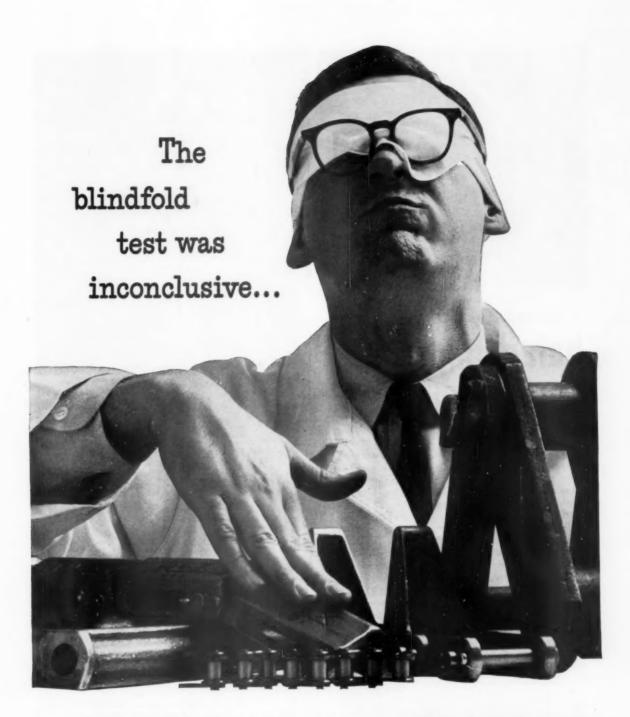


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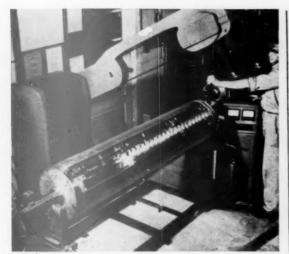
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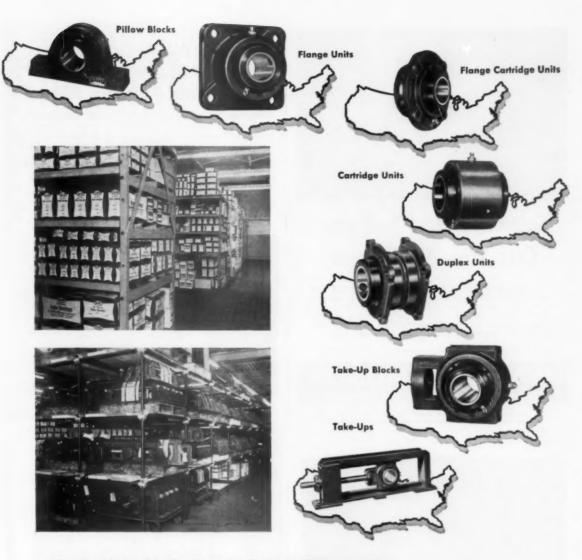
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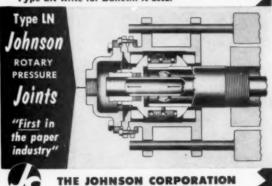
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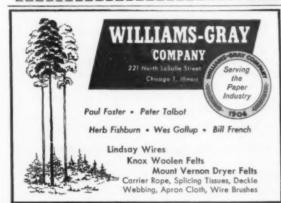


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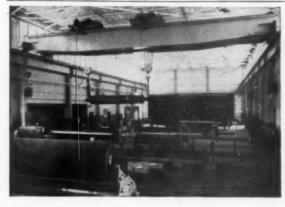
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The Last Word PULP & Editors' Page

Complete Papers of APA's Annual Meeting Will Appear In the May issue of PULP & PAPER

As in past years, PULP & PAPER's PULPWOOD SECTION in the May issue will be the PULPWOOD ANNUAL of the American Pulpwood Association. The complete papers of the 1960 annual meeting APA held at the Hotel Roosevelt, Feb. 22-24 will appear in this issue.

Different facets in the coordination of forest management, efficient pulpwood logging methods in different regions of the country and other important subjects will be dealt with.

Pulpwood production, management and forestry are recognized by the pulp and paper industry, from top management down, as among the most critical problems affecting the long-term welfare of this industry. It is through the much appreciated and cordial cooperation of the president of the American Pulpwood Association, D. E. Hess, head of Glatfelter Pulp Wood Co., George Amidon, who heads M & O Paper Co. woods operations, and who concluded his term as APA president at PAPER WEEK, and W. S. Bromley, executive secretary of APA, and his very helpful staff, that we will be able to present this important complete report again.

It may be added that the quality of our regular monthly PULPWOOD SECTIONS, in all other issues, has frequently been enhanced because of the assistance and cooperation of the American Pulpwood Association. Each year the friendly and helpful bonds between APA and PULP & PAPER become stronger.—The Editor.

Water Becoming Major Concern

The availability of water-just ordinary plain water-is rapidly becoming a major concern to America and to much of the world. The facts indicate that as early as 1975-80, it may be our number one domestic problem.

What brings about this growing concern over water? Is it because there is less water than formerly? Or are we using more?

American industry, farms and homes are using more and more water. Our population is growing by one person every 11 seconds—330 every hour—8,000 every day. By 1980 (just 21 years ahead) there will be 271 million of us. By 2000 (just 41 years ahead) there will be about 350 million.

Our present population uses about 240 billion gallons a day. In 20 years we will need two or three times as much, or at least 500 or 600 billion gallons.

In the opinion of experts in this field, this is not a situation to panic over, but one that should be of real concern. It is a situation that calls for intelligent programs of soil and water conservation management, and for some imaginative search for new water supplies which science can offer.

The Secretary of the Interior reports that the dream of someday converting sea water into usable water at a reasonable cost is getting closer. The department is now authorized to construct and operate five saline water conversion demonstration plants. Eventually there is every expectation that a plant using an atomic reactor might

bring the cost of converting sea water into a thousand gallons of fresh for less than 60 cents—less than many communities are now paying. The potential of this staggers the imagination.

Control of Run-Off is Important

Equally important to the break through in converting sea water into fresh is the progress being made to control run off of water on the land by proper use of land, timber and water. Water and land are inseparable, and the subject of water is best viewed from the various aspects of soil conservation, forestry, wildlife, recreation and human welfare—but never alone.

While the major objective of most Tree Farm lands is to grow a permanent wood supply, the same technique makes them serve as effective watersheds. These spongelike forest soils husband moisture to fresh streams, lakes and reservoirs. The results spell attractions to the hunter, the angler and recreationist, and add to the overall water supply. Tree farming thus makes a major contribution to the solution of a growing water supply problem.

Upstream watershed development is becoming a reality across the country under programs which combine local, state and federal resources and efforts, and with local people in charge. Tree farming is private industry's part of this national effort to help guarantee the continued blessing of water to Americans.—From Weyerhaeuser News

Something To Think About

A Caterpillar Tractor Co. advertisement we read recently carried an important message for the pulp and paper industry. That is because the future of this industry is so closely tied to growth of population. Paper is a basic commodity, used by everyone, and the more the people, the more paper they need.

The advertisement showed a picture of a new born babe, and said (our own comments are parenthetical):

"You don't know him. Why, then, do you figure in his future? (the paper industry certainly does!)

"By 1975, the population of this country will number 235 million. That's an increase of over 60 million—more people than now live west of the Mississippi.

"In just 16 short years we will need more food, water, shelter, schools, hospitals, and power (and paper). And in such vast amounts that unless we start to work immediately, our standard of living will drop considerably—our children's future will be seriously threatened.

"The President recognized this need in his State of the Union message—he pointed out the need for a long-range program to keep pace with our tremendous growth.

"When he (the baby) is 16, the nation will need: tens of thousands of miles of new road . . . almost double our present water supply . . . double our present school facilities . . . 20 million new homes . . . 20% of our present housing rebuilt . . . 2½ times more oil . . . 60% more lumber . . . 100% more pulpwood . . . 55% more metal ores . . . conservation practices on 1,159,000,000 acres of agricultural lands . . . 123,000 new dams and many miles of levees . . . double our present hospital facilities . . . triple our electric power."

That's quite a lot to think about. And this industry will have to do something about it.

Solve Your Adjustable Speed Problems



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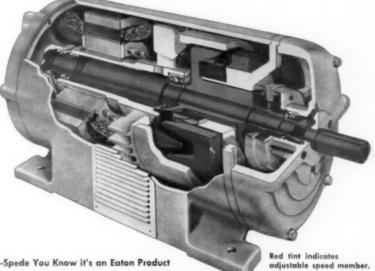
f your problem is in the field of speed control, tension control, power transmission, or testing, Dynamatic Eddy-Current Equipment is the ideal solution. Dynamatic Ajusto-Spede Drives, Couplings, Brakes, and Dynamometers are solving these problems in virtually every industry-in both plant machinery and end product applications. Dynamatic equipment can do the same for you.

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The New Quill-Type Ajusto-Spede Drive provides controlled adjustable speeds for applications from 1/2 HP through 71/2 HP. Together with the new K-2 Electronic Control and push-button station, this new Ajusto-Spede Drive comprises a compact, low-cost, 3-unit drive package.

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